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EXPERT GROUP ON MICRO-ORGANISM AND INVERTEBRATE GENETIC RESOURCES FOR FOOD AND AGRICULTURE

First Meeting

Rome, 3–5 October 2018

ACCESS AND BENEFIT-SHARING FOR GENETIC RESOURCES FOR FOOD AND AGRICULTURE: SURVEY FINDINGS

Note by the Secretariat

At its Sixteenth Regular Session, the Commission on Genetic Resources for Food and Agriculture (the Commission) agreed to produce non-prescriptive explanatory notes to complement the ABS Elements. The explanatory notes aim to describe the distinctive features and specific practices of different subsectors of GRFA within the context of the ABS Elements. As input for developing the explanatory notes, the Commission requested the Secretariat to collect survey-based information on:

1. use and exchange practices, relevant voluntary codes of conduct, guidelines and best practices, and/or standards and community protocols as well as model contractual clauses on ABS specifically addressing GRFA;
2. how prior informed consent (PIC) or approval and involvement of indigenous and local communities is obtained under their jurisdictions and on experiences with the implementation of any relevant ABS measures in the case of GRFA;
3. experiences and views of relevant indigenous and local communities and other stakeholders regarding how countries can consider approaching PIC or approval and involvement of indigenous and local communities in the case of GRFA and associated traditional knowledge;
4. experiences with the use of the ABS Elements; and
5. existing practices in the different subsectors with regard to different uses of GRFA to which ABS measures apply.

This document reports on the results of two separately conducted surveys, one targeted to all National Focal Points/Coordinators (NFPs/NCs) of the Commission for the different subsectors to collect information related to numbers 1, 2 and 4 and the second to all stakeholders of the Commission for the different subsectors to collect information related to numbers 1, 3 and 5.

The survey was developed over the course of several months with input from multiple experts. It was carried out by Mr Sélim Louafi, Centre International de recherche agronomique pour le développement (Cirad), France and Mr Eric Welch, Center for Science, Technology & Environmental

Policy Studies, Arizona State University, USA. Survey administration included an advance email notification, an official invitation and three reminder notices. As part of the administration, the survey team responded to enquiries from invited participants and assisted with troubleshooting of any problems. No significant problems were reported during administration.

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I. INTRODUCTION

At its Sixteenth Regular Session, the Commission on Genetic Resources for Food and Agriculture (the Commission) agreed to produce non-prescriptive explanatory notes to complement the ABS Elements. The explanatory notes aim to describe the distinctive features and specific practices of different subsectors of GRFA within the context of the ABS Elements. As input for developing the explanatory notes, the Commission requested the Secretariat to collect survey-based information on:

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This document reports on the results of two separately conducted surveys, one targeted to all National Focal Points/Coordinators (NFPs/NCs) of the Commission for the different subsectors to collect information related to numbers 1, 2 and 4 and the second to all stakeholders of the Commission for the different subsectors to collect information related to numbers 1, 3 and 5

NFP/NC Survey

The first NFP survey was implemented electronically between 2 and 28 December 2017. Given the information requested, it was determined that the NFPs and NCs for the different subsectors of GRFA, biodiversity and the Commission constituted a set of individuals with significant expertise and access to current in-country information. Therefore, the sample frame consists of all known NFPs for plant, forest and aquatic genetic resources, the NCs for animal genetic resources, and the NFPs for biodiversity for food and agriculture and the Commission. Contact information for all NFPs/NCs was obtained from the Commission and was updated by official enquiry by the Commission to the member countries. The final list of NFPs/NCs consisted of 624 individuals from 189 countries. (Note: not all countries have designated individuals for all NFP/NC positions and some individuals serve in multiple capacities.)

The survey was developed over the course of several months with input from multiple experts, including the Commission Secretariat. The survey was administered online during December 2017. Administration included an advance email notification, an official invitation and three reminder notices. As part of the administration, the survey team responded to enquiries from invited participants and assisted with troubleshooting of any problems. No significant problems were reported during administration.

In total, 280 individuals from 136 countries responded to the survey, resulting in an individual response rate of approximately 45 percent.

Stakeholders Survey

The second survey was implemented electronically between 4 and 27 April 2018. The list of stakeholders and indigenous people and local communities for the different subsectors of GRFA was

developed based on a specific request in the NFP survey to name two or more experts for each of the six subsectors (animals, plants, aquatics, forest, microbes and insects). For the indigenous people and local communities (IPLC) group, additional names were extracted from the list of observers in selected and relevant international forums (the Commission, International Treaty on Plant genetic Resources for Food and Agriculture [ITPGRFA], WIPO's Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Convention on Biological Diversity [CBD]). The final list of stakeholders and indigenous people and local communities consisted of 517 individuals from 90 countries and global indigenous people's organizations.

The survey was developed over the course of several months with input from multiple experts, including the Commission Secretariat. The survey was administered online during April 2018. Administration included an advance email notification, an official invitation and two reminder notices. As part of the administration, the survey team responded to enquiries from invited participants and assisted with troubleshooting of any problems. No significant problems were reported during administration.

In total, 146 stakeholder individuals from 69 countries responded to the survey, resulting in an individual response rate of approximately 28.2 percent. As for IPLC, only 11 individuals (out of 100 names collected) responded. This low response rate means that the sample is not sufficiently representative of the population of ILC actors. As a result these data are not reported in the body of this report. Instead, an appendix provides a general overview of the 11 responses.

The surveys were conducted in close collaboration with Mr Selim Louafi, Senior Research Fellow, Centre de coopération internationale en recherche agronomique pour le développement (Cirad), France, and Mr Eric Welch, Professor and Director of the Center for Science, Technology & Environmental Policy Studies, Arizona State University (ASU), United States of America.

This report is divided into two main parts: stakeholder and ILC survey findings, and NFP/NC survey findings. The first part includes two sections: (1) characteristic of the sample, in particular the individual experience of respondents with ABS; (2) GRFA exchange experiences. The second part includes four sections: (1) characteristic of the sample, in particular the individual experience of respondents with ABS; (2) status of ABS activities for GRFA in countries; (3) country experiences with PIC implementation; and (4) subsector perspectives. A conclusion to the study is presented after the findings.

II. PART 1 STAKEHOLDER AND ILC SURVEY FINDINGS

2.1 Characteristics of the respondents

2.1.1 General overview

The survey captured a wide range of type of stakeholders, the highest percentage of which are public research organizations (39.7 percent, Figure 1: Stakeholder affiliation (%))Figure 1). Only 13 respondents (9 percent) are ILC organizations. Almost 72 percent of respondents are from non-Organisation for Economic Co-operation and Development (OCED) countries, while about half of all respondents spend more than 20 percent of their work time on GRFA issues.

When asked to select their most knowledgeable sector, most respondents selected the plant subsector (50.4 percent), followed by the animal subsector (Figure 2).

Plant, and then technical knowledge (TK) associated with GRFA, animal and forest, are the most commonly exchanged GRFA. More than one-third of stakeholder respondents (37 percent) use or exchange multiple GRFA for research and development (Table 1). Although other subsectors, such as invertebrates, micro-organisms and TK, could be exchanged on their own, they are most often associated to plant or animal in our respondents' population. There is consequently limited representation from invertebrates and micro-organisms. This indicates that consideration of subsectors as independent does not reflect reality; many respondents are active in multiple subsectors.

Figure 1: Stakeholder affiliation (%)

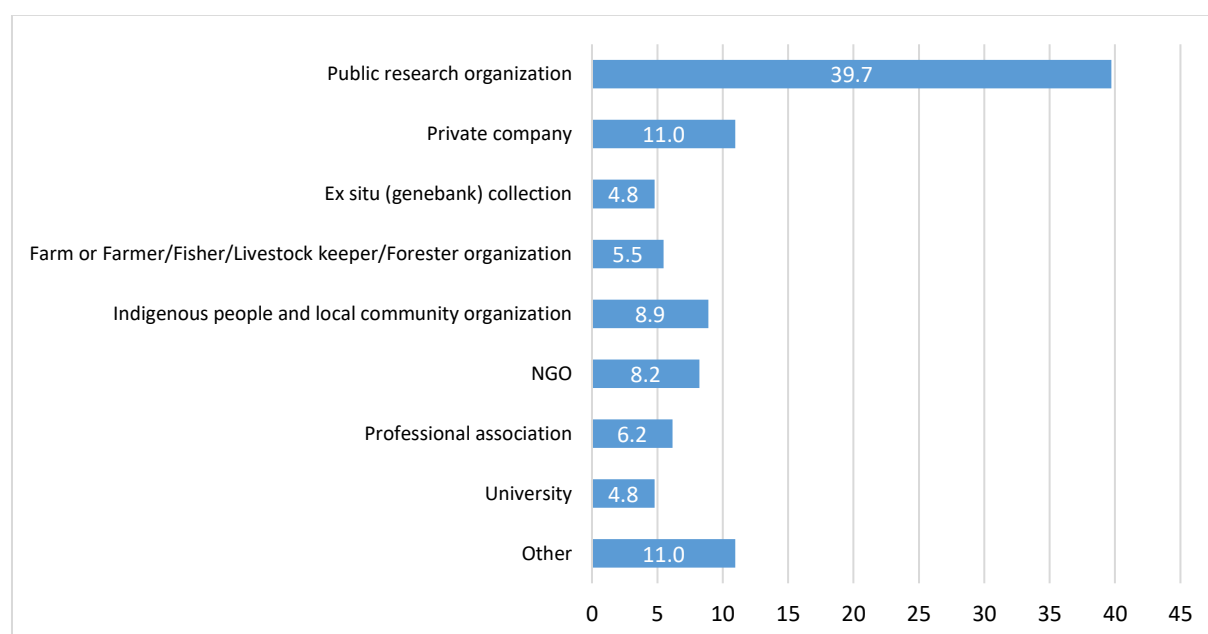
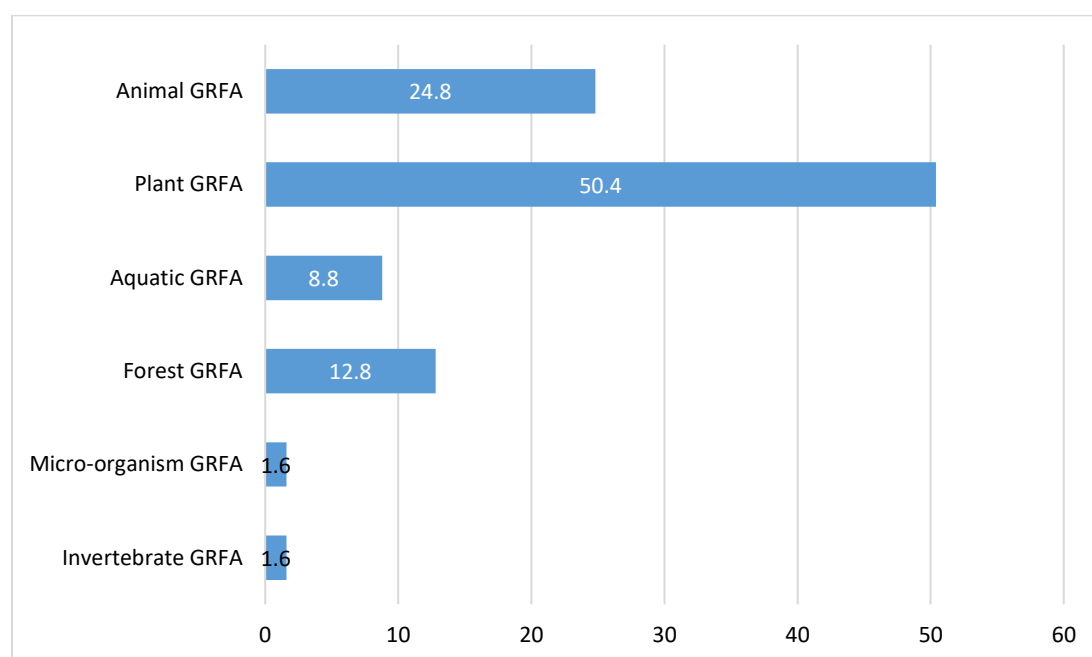


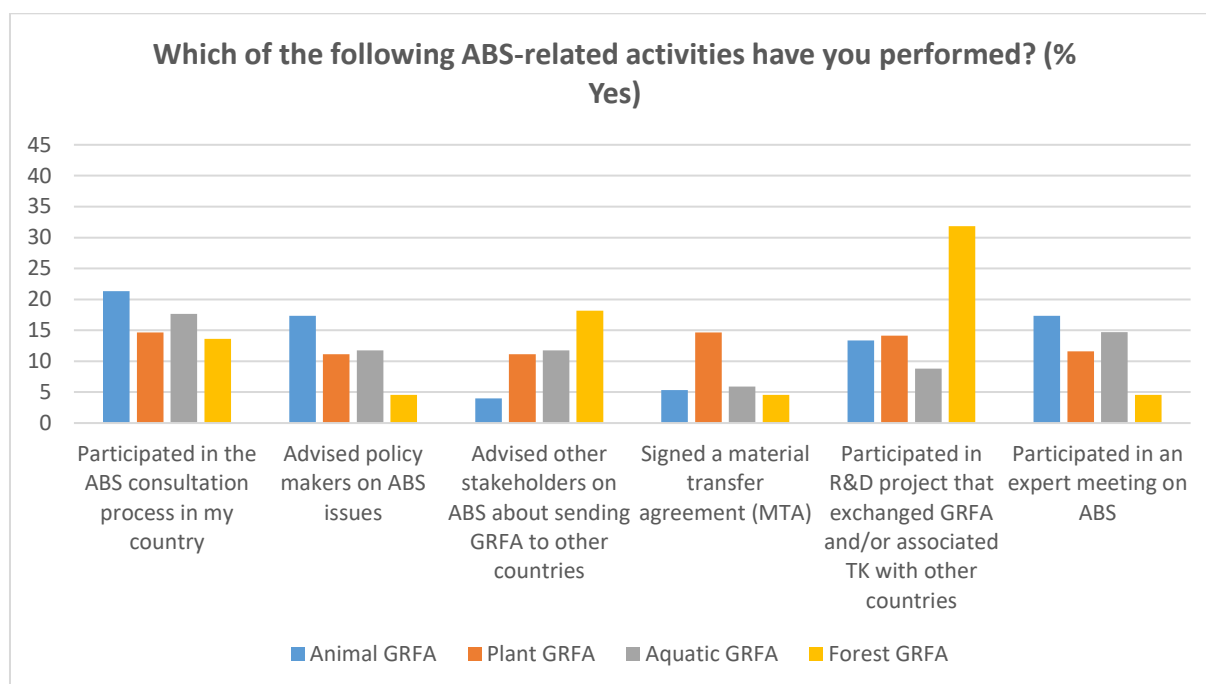
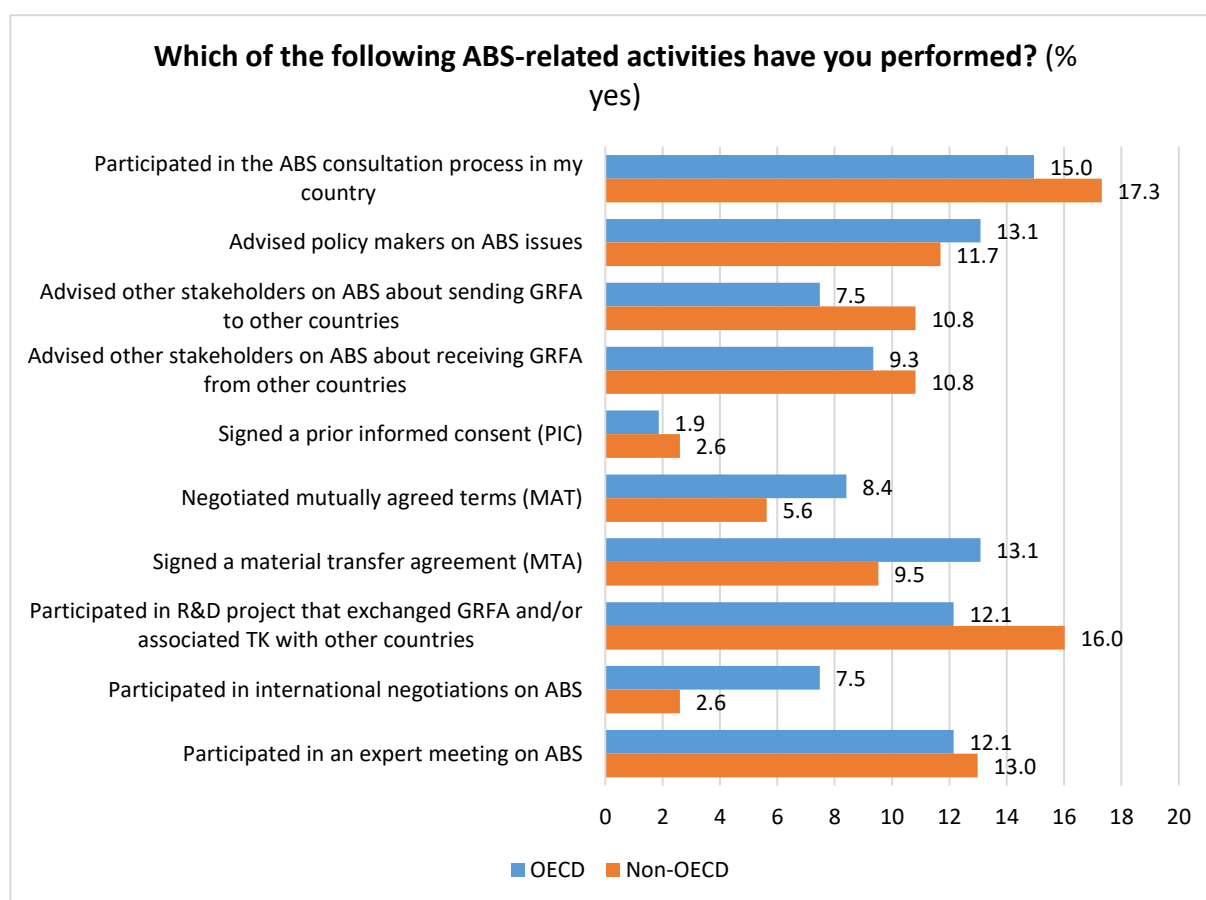
Figure 2: Stakeholders most familiar GRFA Subsector (% yes)**Table 1: Stakeholder exchange of GRFA**

Current stakeholders and IPLC	Percent respondents
Animal GRFA	29.5
Plant GRFA	45.9
Aquatic GRFA	15.1
Forest GRFA	24.7
Micro-organism GRFA	9.6
Invertebrate GRFA	2.7
TK associated with any above	30.1
None of above	13.0

2.1.2 Information, awareness and involvement of stakeholders and ILCs on ABS

To understand the involvement of stakeholders and ILCs in ABS issues in their countries, the survey asked respondents to indicate if they had undertaken a range of different types of associated activities. Figure 3 shows that the respondent sample comprises a range of different experiences with ABS. One-third of forest GR stakeholders are involved in R&D projects that exchange GRFA. On average across subsectors, less than one-fifth of respondents are embedded in policy activities (consultations and advice to policy-makers). Most respondents have very little direct experience with material transfer agreements (MTAs), though experience with MTAs is greater in the plant subsector.

There seems to be no significant differences between OECD and non-OECD countries (Figure 4), except for participation in international negotiations, where OECD countries report higher levels, and participation in R&D projects, where non-OECD countries report higher levels.

Figure 3: Stakeholder involvement in ABS-related activities**Figure 4: Stakeholder involvement in ABS activities (OECD/non-OECD)**

2.2 Stakeholders' GRFA exchange and ABS experiences

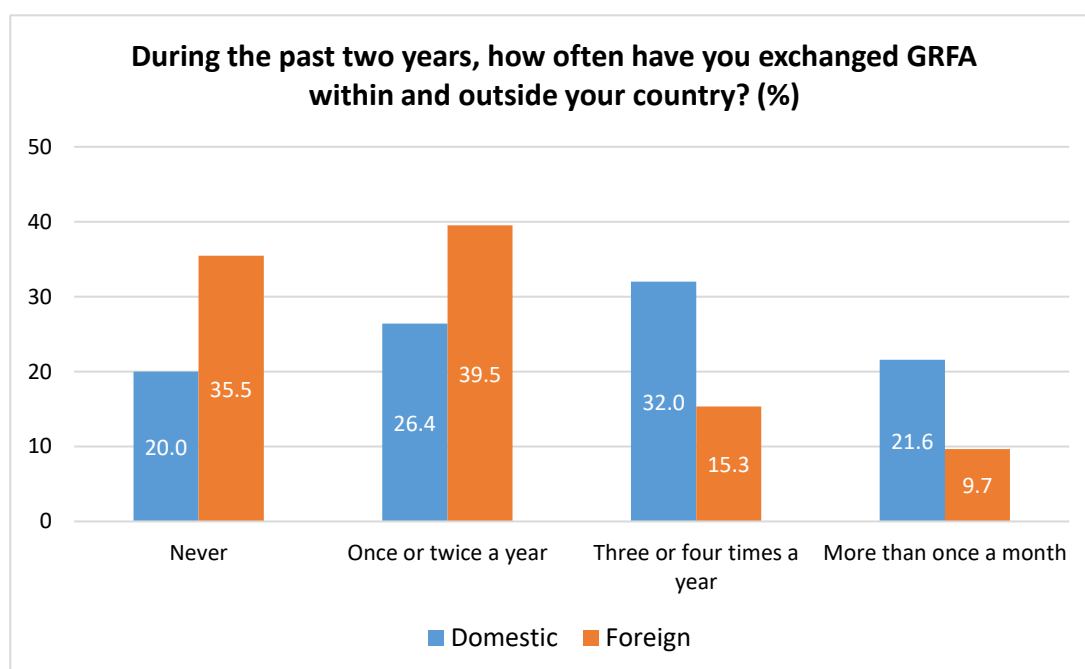
To understand existing practices in the different subsectors with regard to different uses of GRFA to which ABS measures apply, the survey asked respondents to indicate their experience with material they sent to and/or received from people and organizations (both domestic and foreign) during the last two years.

2.2.1 Exchange experience

Frequency of exchange

Respondents are more likely to report that infrequent exchanges (once or twice a year) are with foreign rather than domestic entities, while the reverse is true for more frequent exchanges. More people report never exchanging internationally than domestically.

Figure 5: Frequency of domestic and foreign exchange



There are no major differences in the pattern between OECD and non-OECD countries. Both groups report that around one-fourth of domestic exchanges occur on a regular basis (more than once a month) as compared with 10 percent of foreign exchanges that are regular.

Figure 6: Frequency of domestic exchange by subsectors

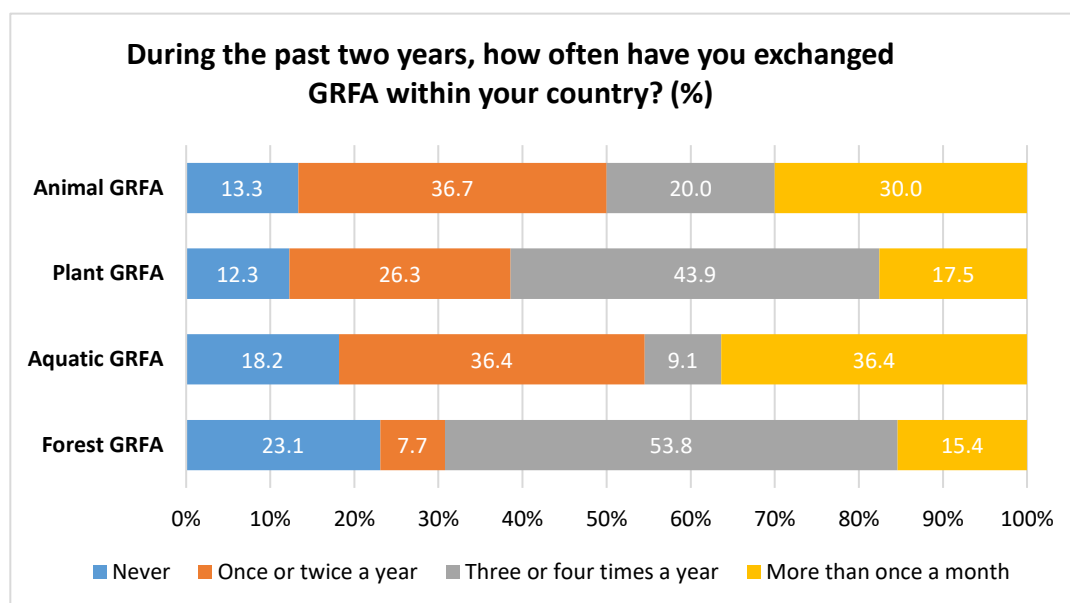
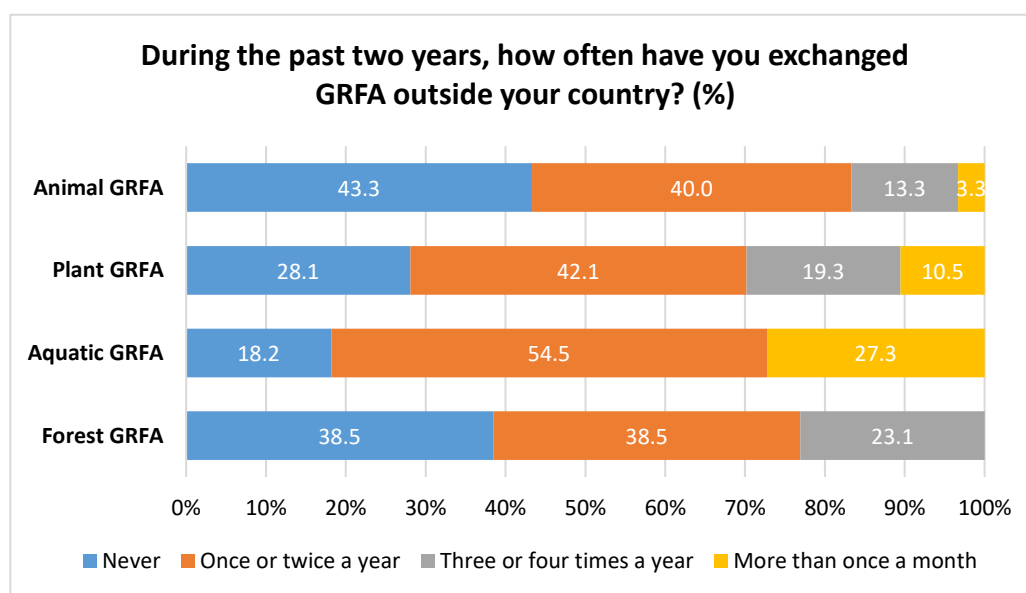


Figure 7: Frequency of international exchange by subsectors



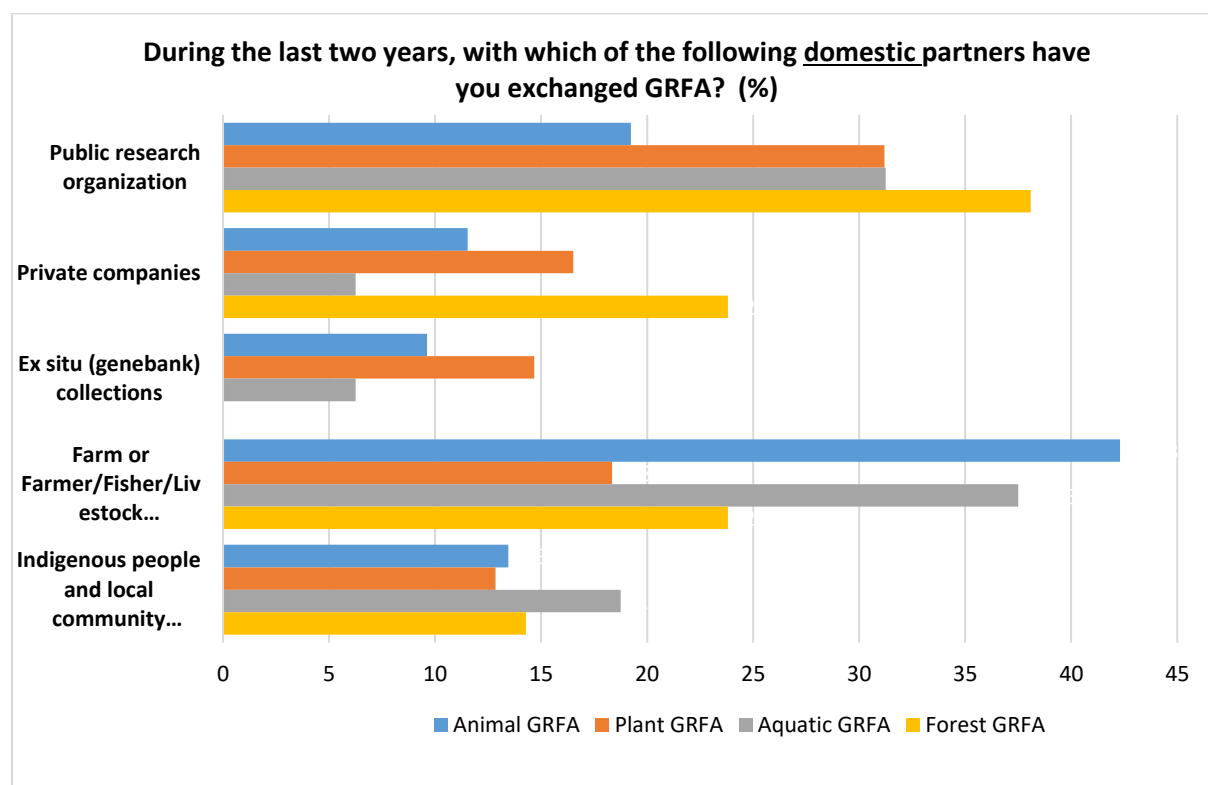
Forest and plant subsectors report more domestic exchanges (Figure 6) while plant and aquatic subsectors exchange more frequently with foreign entities (Figure 7). The animal and forest sectors are the two sectors that report least foreign exchanges (Figure 7).

Type of partners

Results of domestic exchange experience according to type of partners show that the animal sector has fewer public sector partners. Along with the aquatic sector, the animal sector is heavily involved in exchanges with farmers' communities or organizations (Figure 8).

An important proportion of exchange of forest genetic resources is with private companies, possibly for direct use through plantations.

Exchange with *ex situ* collections is important mainly for plant and completely absent for forest.

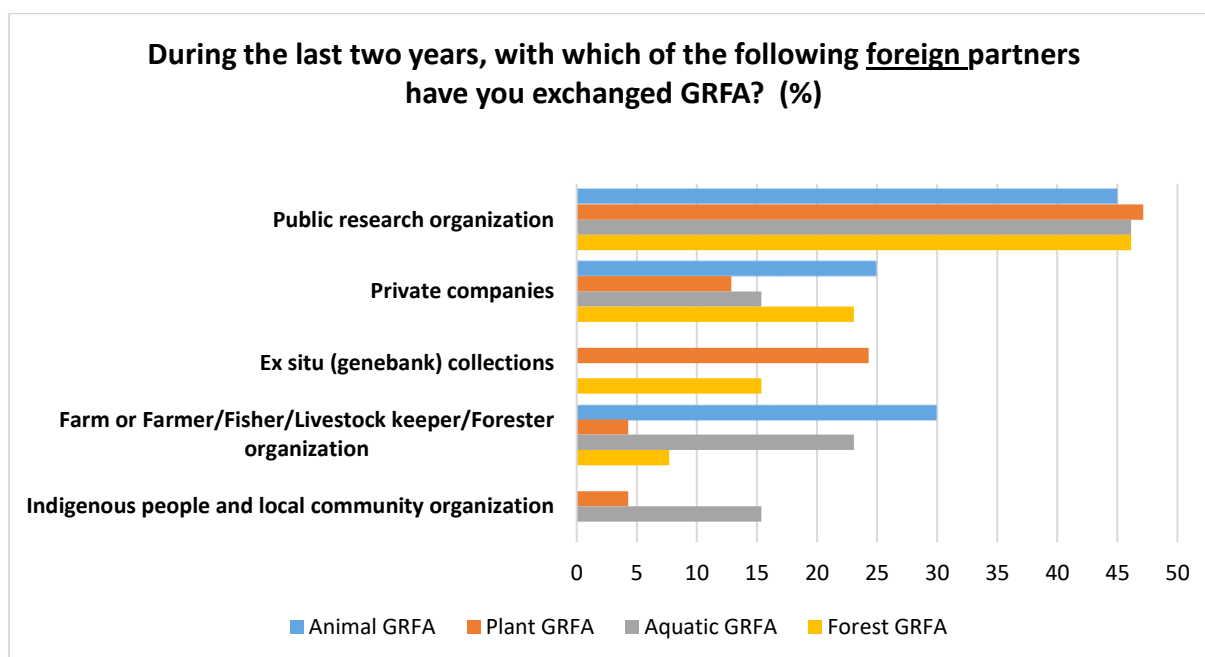
Figure 8: Type of domestic partners for GRFA exchange

Patterns of exchange differ quite substantially between domestic and foreign partners. Foreign exchanges are mainly with public research organizations. This pattern is similar across subsectors.

Domestic and foreign exchange with private companies is the most prominent for animal and forest genetic resources. Animal and aquatic domestic and foreign exchange is higher with farmers' organizations or communities than it is with plants and forest. This pattern is especially evident for domestic exchange.

Finally, almost 15 percent of forest genetic resources international exchanges take place with *ex situ* collections whereas such exchanges do not exist for aquatic and animal.

Figure 9: Type of foreign partners for GRFA exchange



Comparison between OECD and non-OECD countries display interesting differences. For example, at the domestic level, there is more exchange reported by non-OECD countries with local communities and farmers' organization and by OECD countries with genebanks and private companies (**Error! Not a valid bookmark self-reference.**). At the international level, more exchange is reported by non-OECD countries with public research organizations and by OECD countries with genebanks and private companies (Figure 11).

Figure 10: Type of domestic partners (OECD/non-OECD)

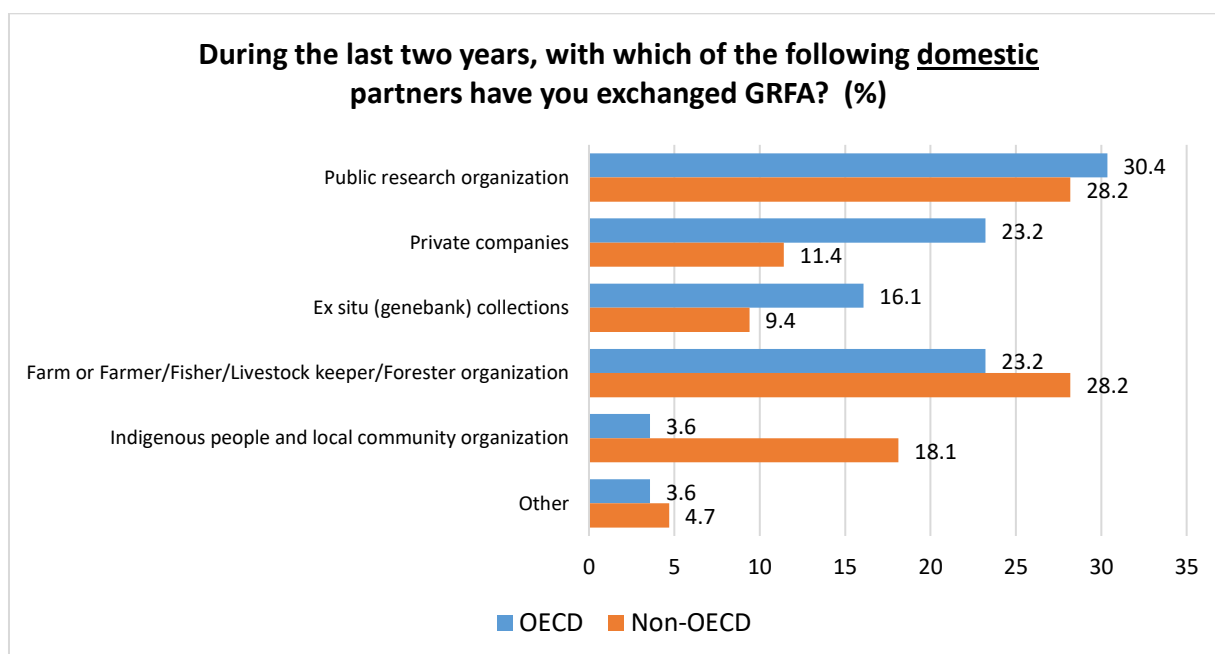
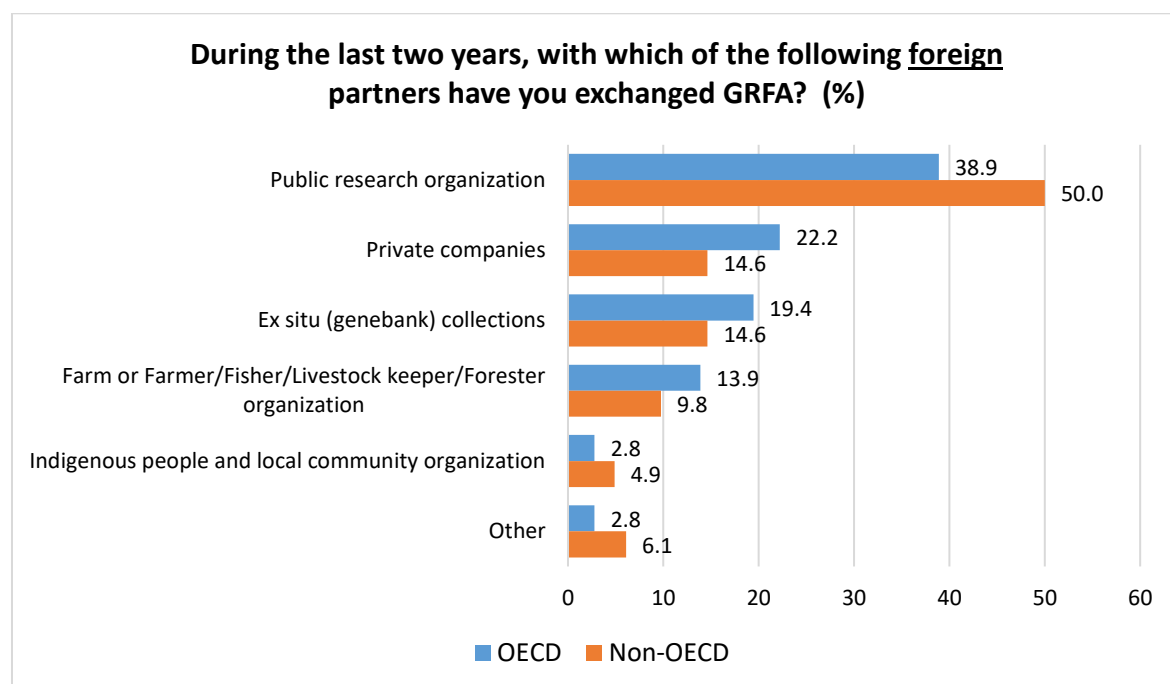


Figure 11: Type of foreign partners (OECD/non-OECD)

Collaboration patterns

To understand the collaboration patterns, the survey asked respondents to indicate if their exchanges were generally embedded within a larger collaborative relationship or agreement. The results show that it is most often the case that respondents exchange as part of a collaborative relationship. This is true for domestic and foreign, country grouping (OECD/non-OECD) and all subsectors (see **Error! Not a valid bookmark self-reference.** to Figure 15).

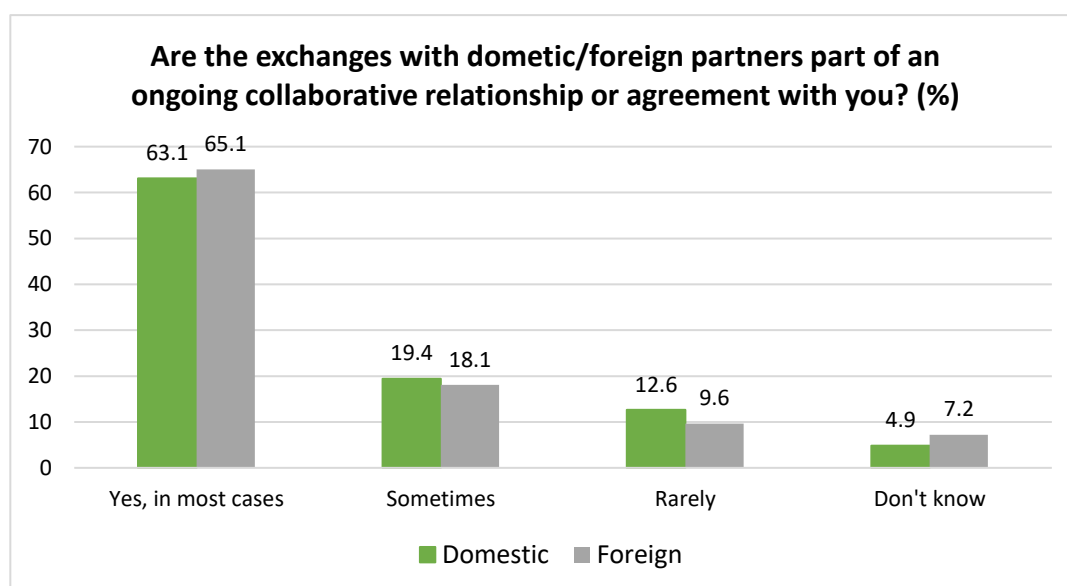
Figure 12: Collaboration pattern with domestic and foreign partners

Figure 13: Collaboration pattern with foreign partners (OECD/non-OECD)

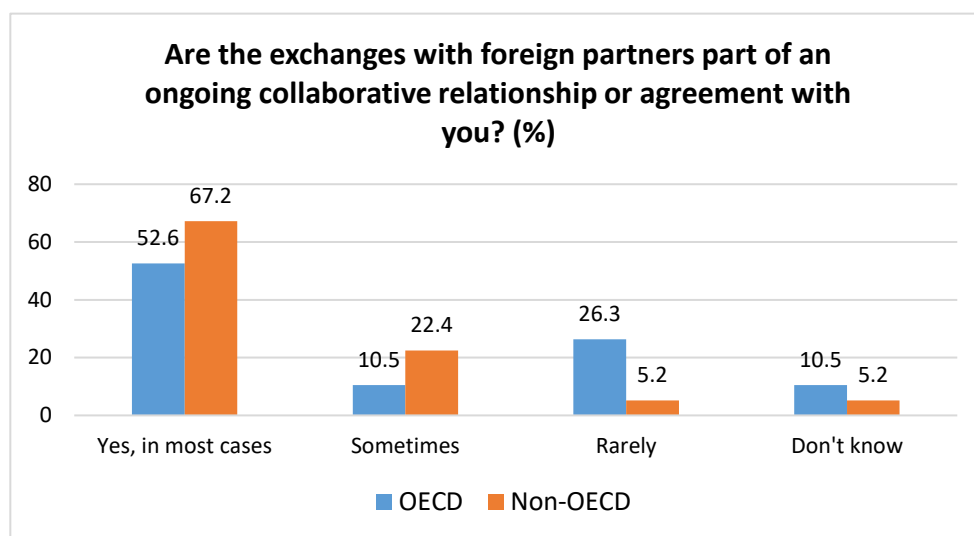


Figure 14: Collaboration pattern with domestic partners by sectors

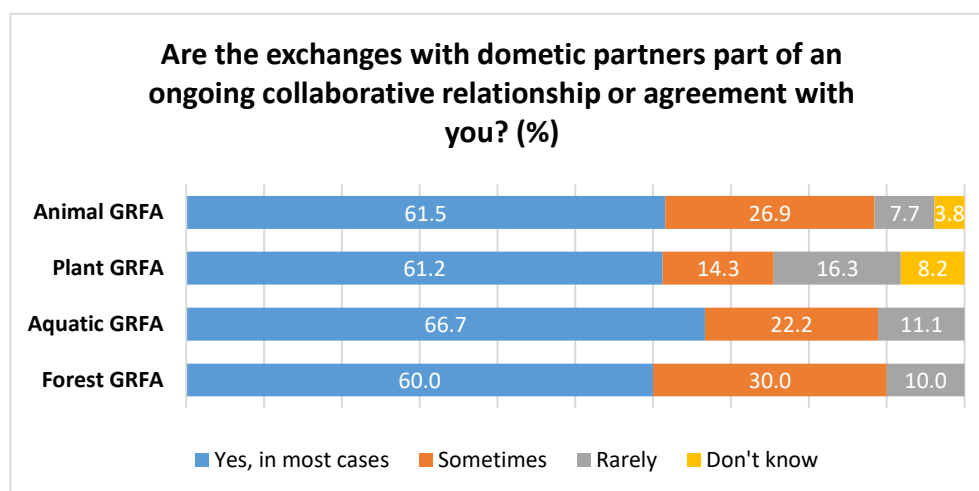
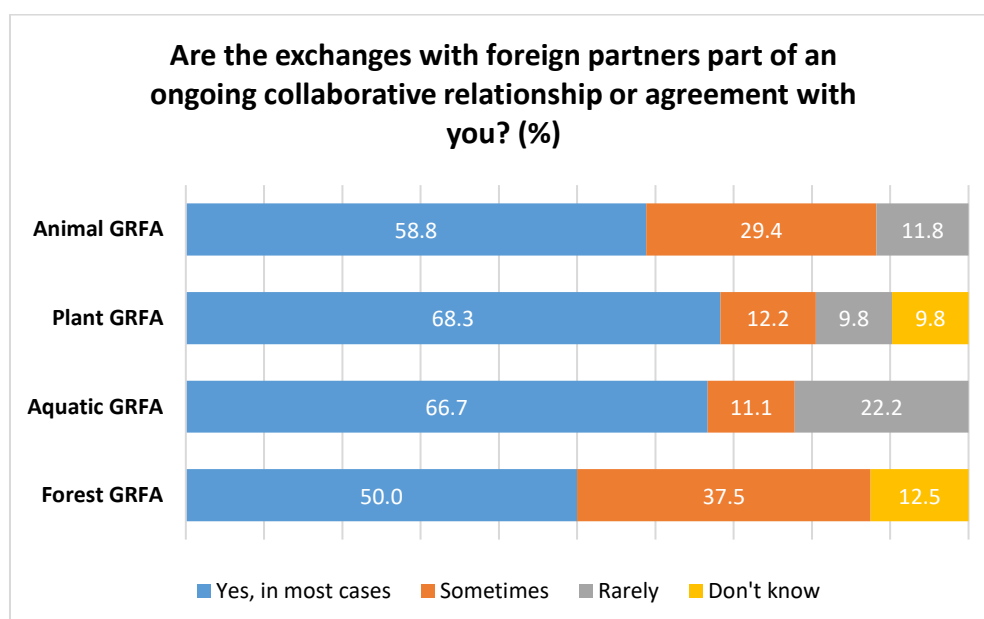


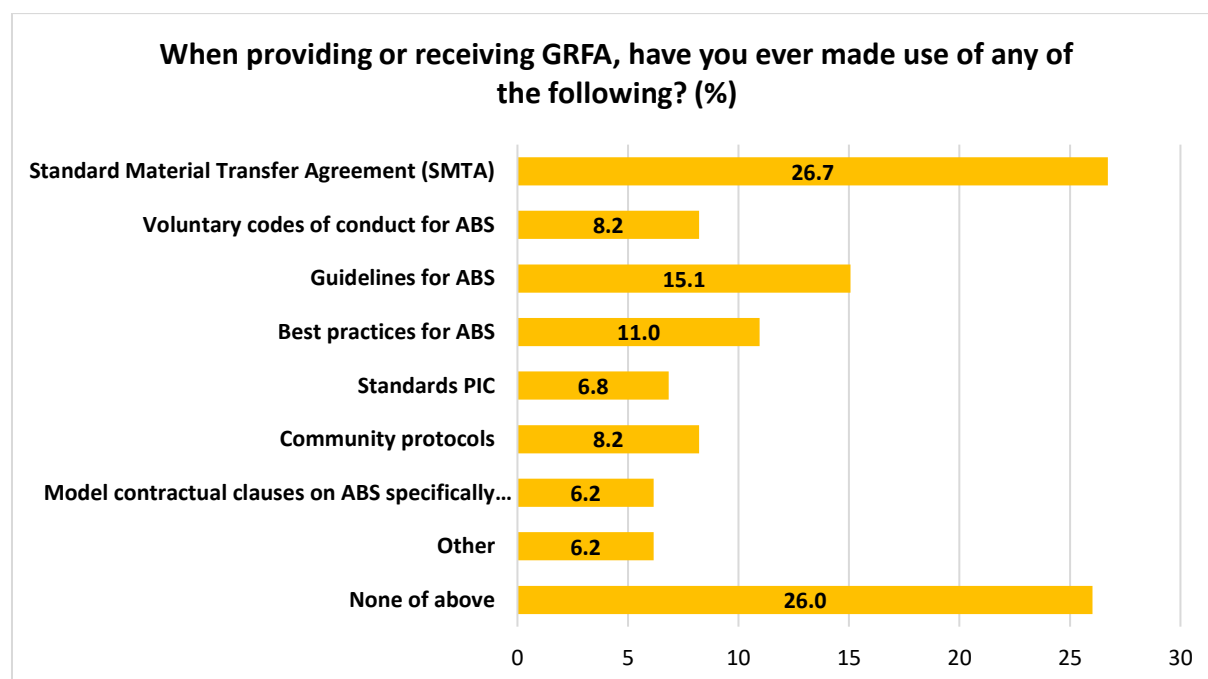
Figure 15: Collaboration pattern with foreign partners by sectors



Instruments for exchange

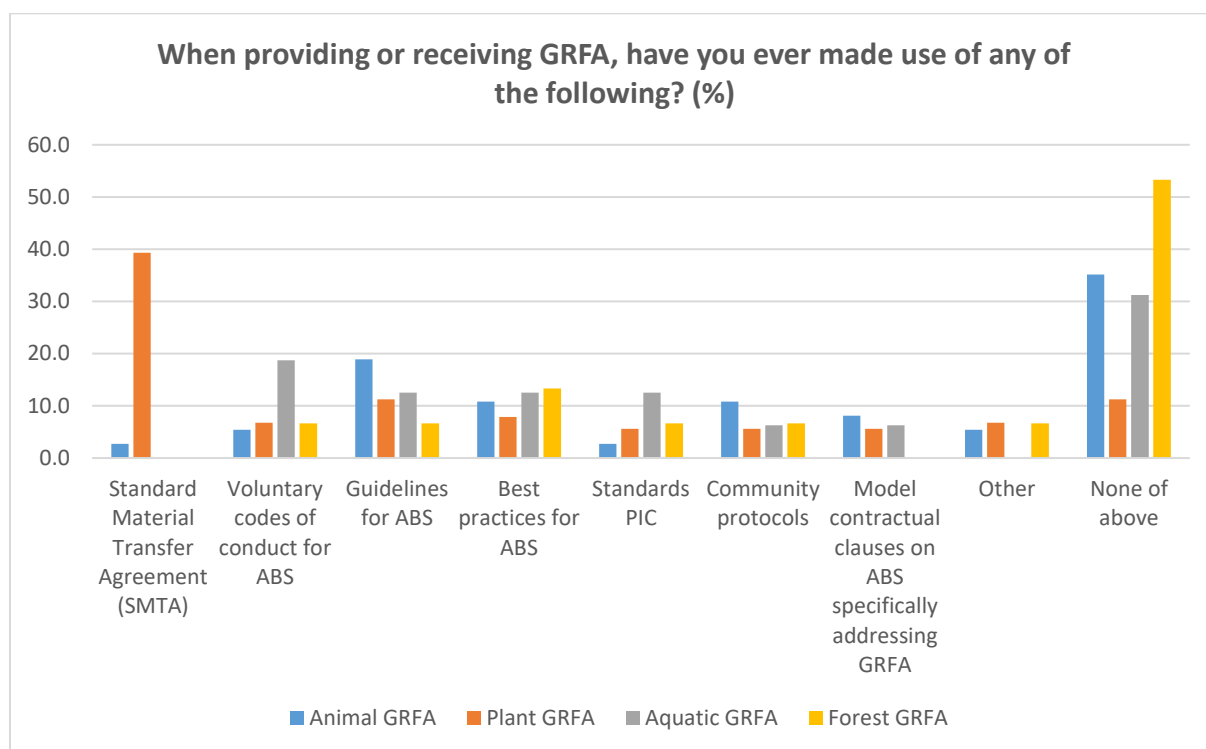
The survey asked respondents about the instruments being used to help them exchange GRFA. Findings show that there is a variety of instruments being used (Figure 16). Several respondents also reported using multiple instruments.

Figure 16: Stakeholders use of instruments for GRFA exchange

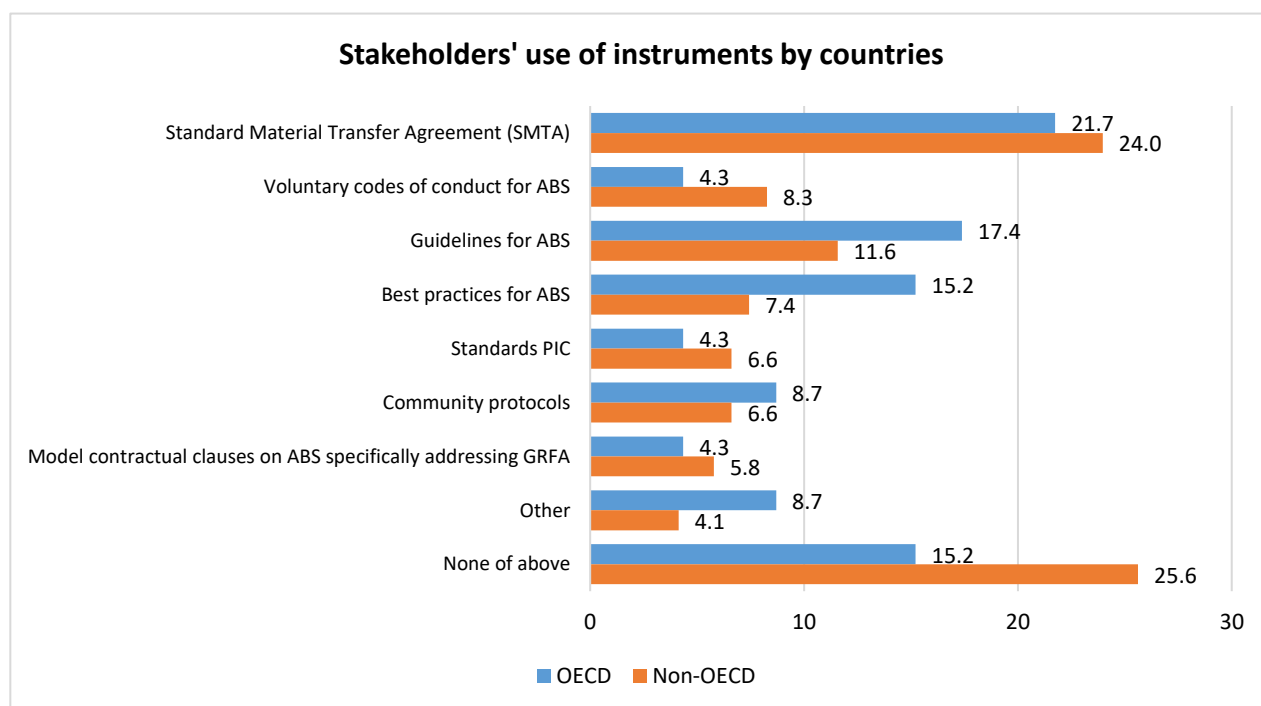


Findings by subsector indicate that, as expected, the plant sector relies heavily on the standard material transfer agreement (SMTA) while all other sectors are much more dependent on guidelines, best practices and, to a lesser extent (except for aquatic), codes of conducts (Figure 17). The proportion of stakeholders who make use of any instrument is very high in the forest, animal and aquatic sectors. This seems to indicate that many exchanges in non-plant subsectors still remain ad hoc or informal in nature.

Community protocols seem to be more developed in the animal sector than in the other sectors (though their use still remains quite limited, around 10 percent). Aquatic stakeholders reported the use of standard PIC but again only for a small proportion of users (12 percent).

Figure 17: Stakeholders' use of instruments by sectors

Comparison across countries shows that guidelines and best practices seem to be quite developed in OECD countries whereas ad hoc or informal exchanges are more common in non-OECD countries (Error! Not a valid bookmark self-reference.).

Figure 18: Stakeholders' use of instruments (OECD/non-OECD)

2.2.2 Access process

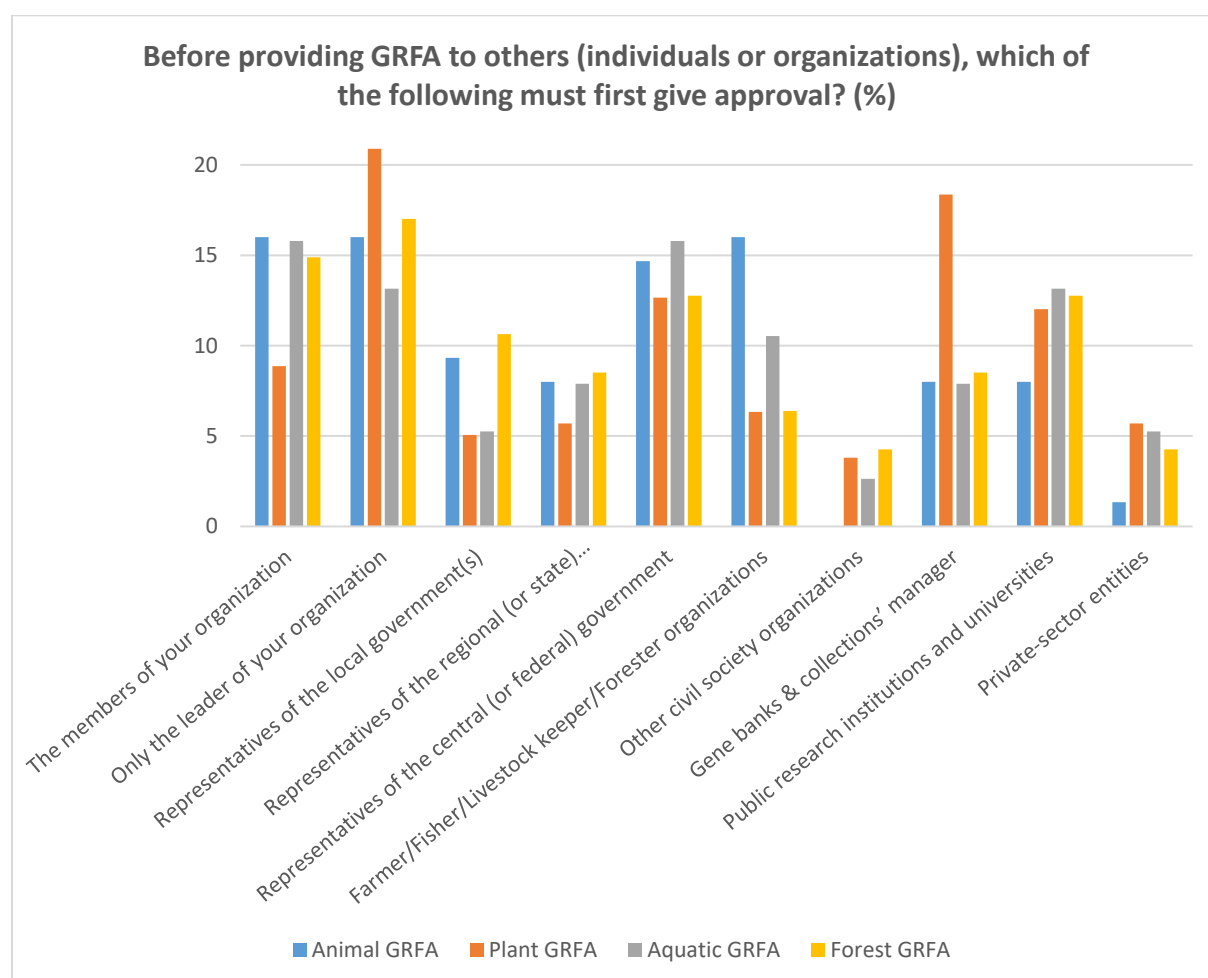
2.2.2.1 Approval procedures

The survey asked respondents about their access procedures. **Error! Not a valid bookmark self-reference.** shows that almost all respondents need approval from other individuals before providing GRFA to others (only three individuals reported that they do not need the approval of anyone). This confirms that very few respondents have full control on the material they hold. The majority needs approval of the head of their organization. Other groups often consulted for approval are representatives of the central government, genebank managers, public research organizations and other members of the respondent's organization.

Differences by subsectors confirm the importance of genebanks in the approval process for plants (Figure 20). Farmers' organizations and local communities are more often consulted for animal GR access; to a lesser extent this is also true for aquatic GR access. Notably, local government representatives are more important for animal and forest access than for plant or aquatic access. Finally, public research organizations are less important for the animal sector.

Figure 19: Approval process before providing GRFA



Figure 20: Approval process before providing GRFA by sectors

Findings also show that one-fifth to one-third of respondents never negotiate directly the terms and conditions of access and benefit-sharing. This means conversely that almost 70 percent are involved at some point.

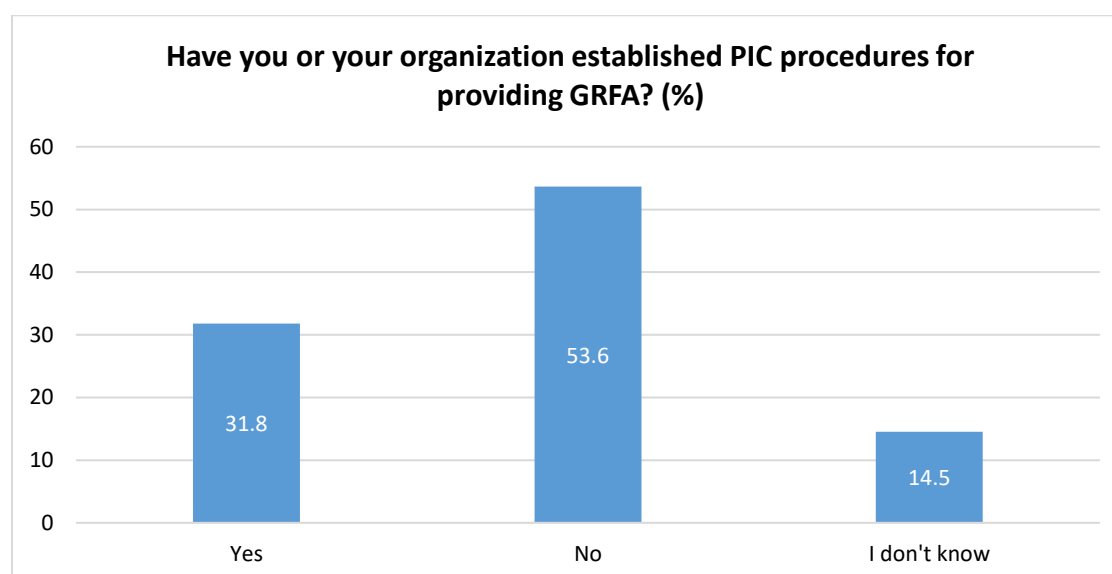
Findings by subsector show substantial differences (Table 2): the proportion of respondents never involved in negotiating is substantially higher for plant and forest subsectors than for aquatic and above all animal subsectors.

Table 2: Percent who never negotiate terms of access and benefit-sharing, by subsector

	Animal GRFA	Plant GRFA	Aquatic GRFA	Forest GRFA
Never negotiate	10.7	38.9	18.2	30.8

2.2.2.2. Experience with PIC

Only a small proportion of stakeholders in OECD countries and a little more than one-third in non-OECD countries indicated that they had established PIC procedures (Table 3). This instrument seems more developed in the aquatic subsector, followed by the plant and animal subsectors. It is almost absent in the forest subsector.

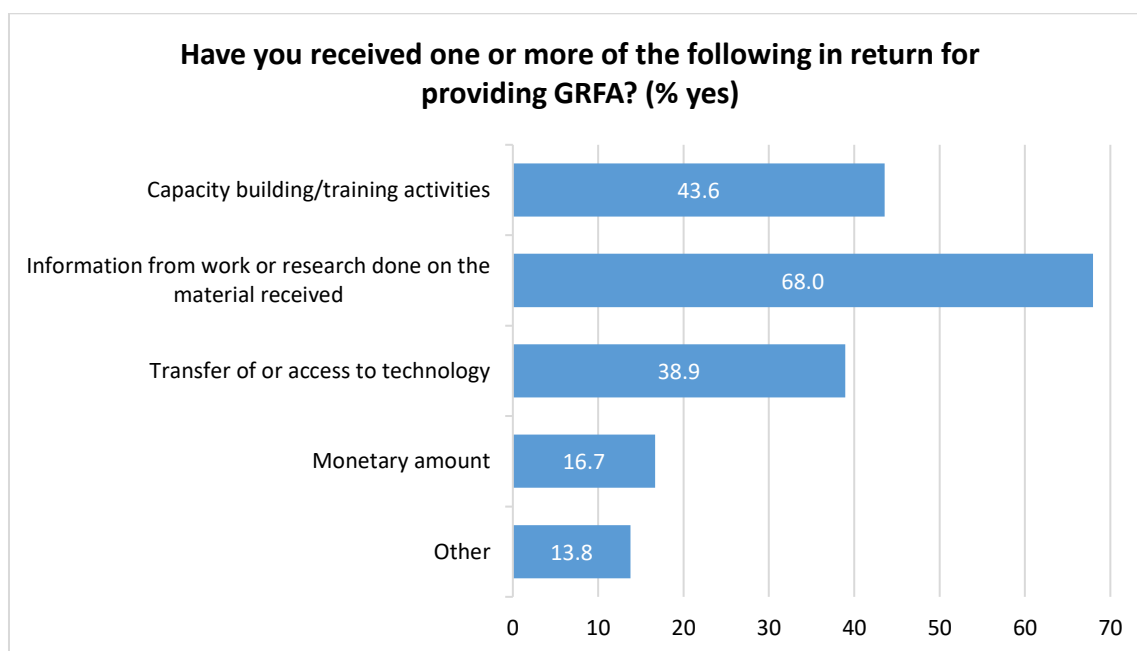
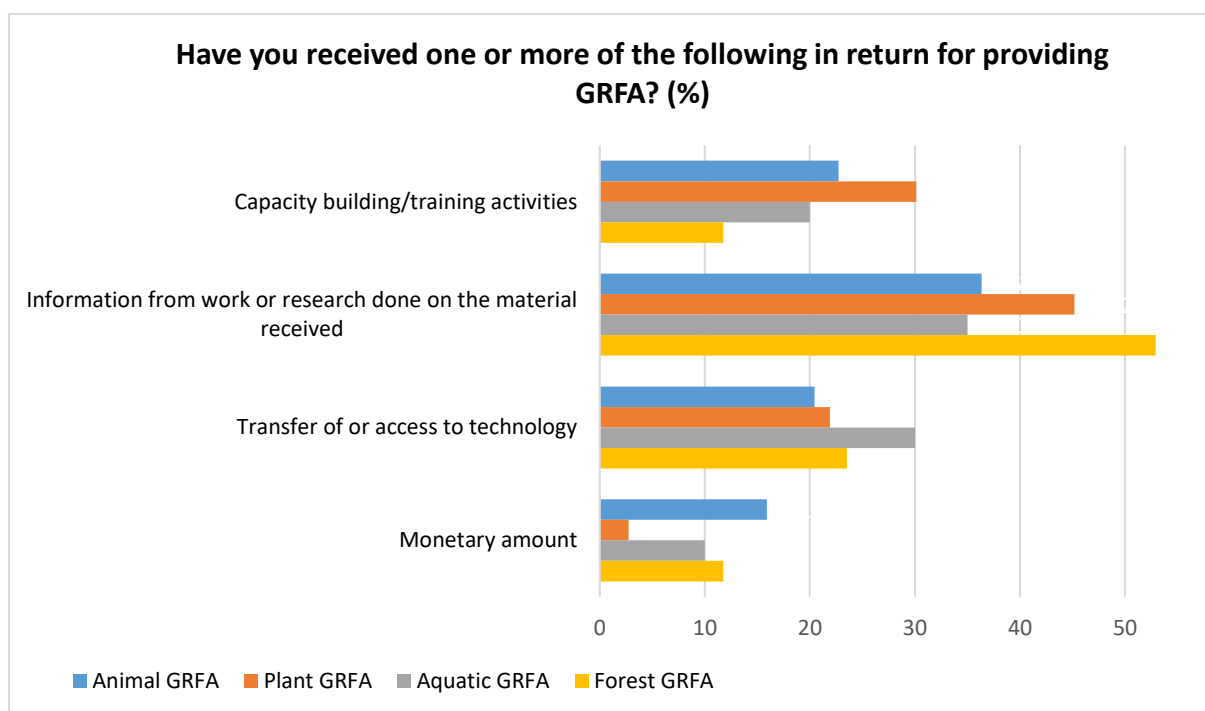
Figure 21: PIC procedures established by stakeholders' organization**Table 3: PIC procedures established by stakeholders' organization (OECD/non-OECD)**

	OECD	Non-OECD
Yes	14.3	37.8
No	71.4	47.6
I don't know	14.3	14.6

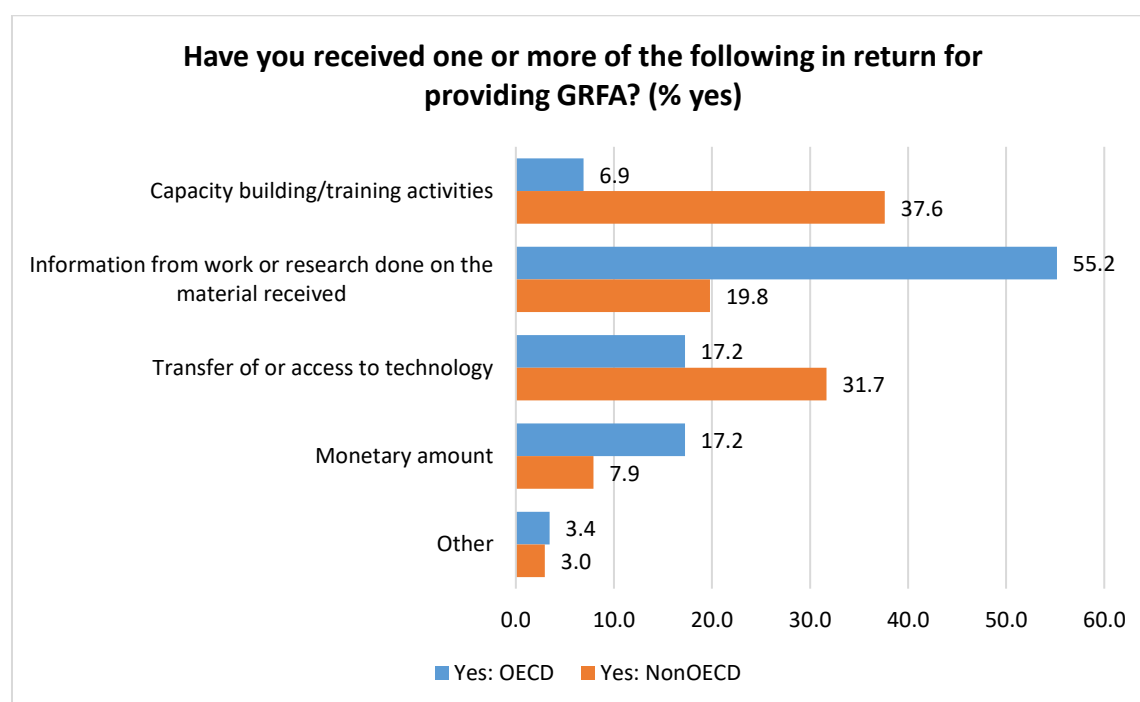
2.2.3 Benefit-sharing

The survey asked respondents about their benefit-sharing practices. Findings show that, generally speaking, monetary benefits are not often provided in exchange for GRFA. Flowback of information from work done on the material received is the most typical type of benefit received (**Error! Not a valid bookmark self-reference.**).

Plant subsector respondents reported very few monetary returns, whereas monetary returns are of greater importance in the animal subsector (Figure 23). Flowback of information is more important in plant and forest sectors and technology transfer is more important in the aquatic subsector. Capacity building is particularly important in the plant subsector, but has little importance in the forest subsector.

Figure 22: Type of benefits received**Figure 23: Type of benefits received by sectors**

Comparison between types of countries shows significant differences in practices (Figure 24). Feedback information is provided more often to OECD countries, while capacity building and technology transfer are more often provided to non-OECD countries.

Figure 24: Type of benefits received (OECD/non-OECD)

Benefits provided by stakeholders in return for using TK are mainly provided as capacity building, feedback information and transfer of technology (**Error! Not a valid bookmark self-reference.**). Comparison between countries shows that users from OECD countries favour flowback of information and monetary payments whereas non-OECD stakeholders favour capacity building and technology transfer (Figure 26).

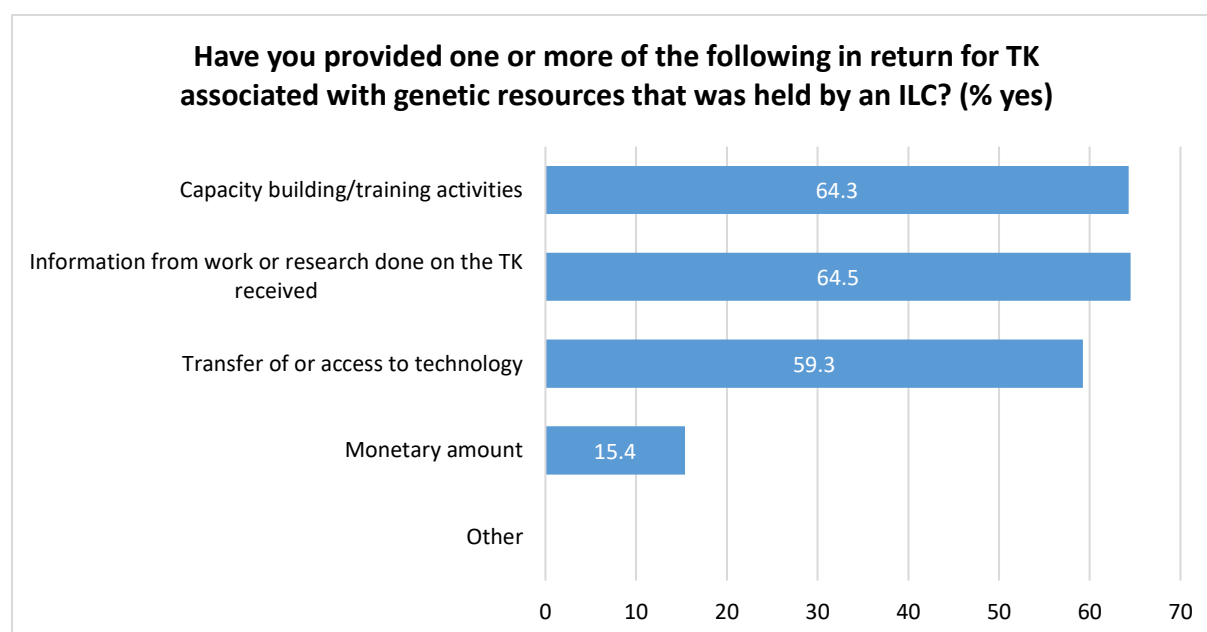
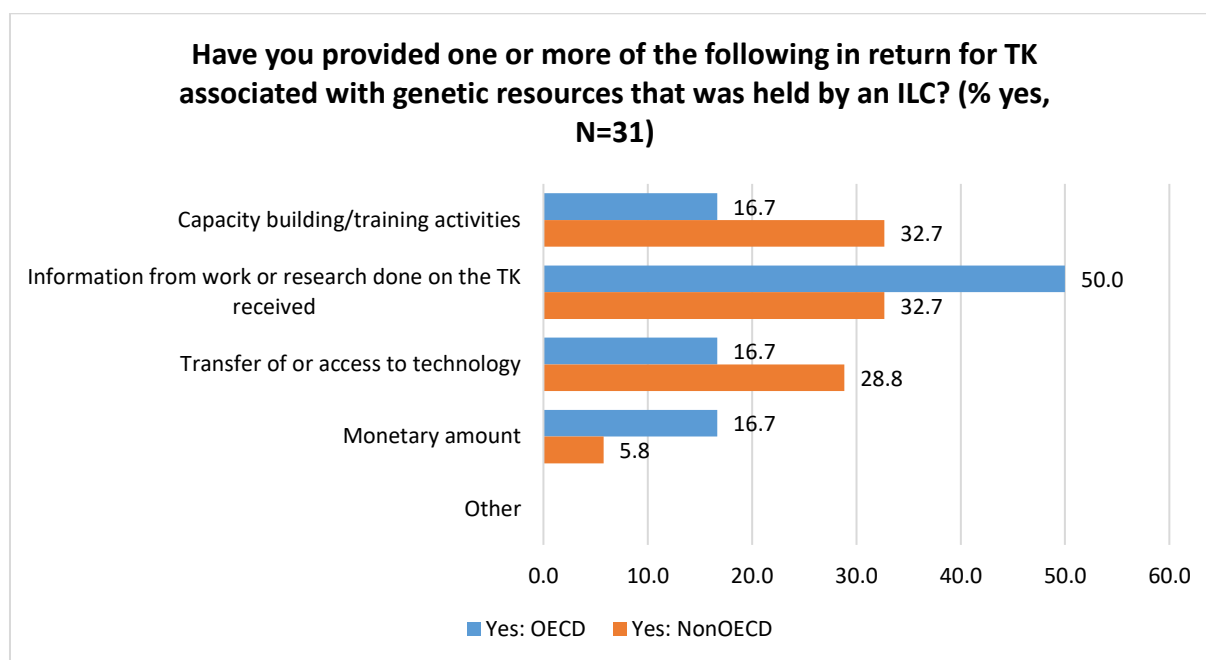
Figure 25: Type of benefits provided in return for TK associated for GRFA

Figure 26: Type of benefits provided in return for TK associated for GRFA (OECD/non-OECD)



Finally, the survey asked respondents to specify which groups are entitled to receive benefits according to their ABS agreements. Findings show that benefits are distributed to different ranges of individuals but also, to a lesser extent, to some sector-level, country or global pools (**Error! Not a valid bookmark self-reference.**). Comparison across subsectors indicates that only plant and forest subsectors make use of a global multilateral fund (presumably the one of the ITPGRFA) and that forest and animal subsectors are more inclined to redistribute to individual providers of the material (Figure 28). The aquatic sector stakeholders report more use of country-level funds. Finally, comparison across country type indicates that non-OECD countries give less importance to the individual provider than to governmental-level benefits or country-level funds.

Figure 27: Allocation of benefits (OECD/non-OECD)

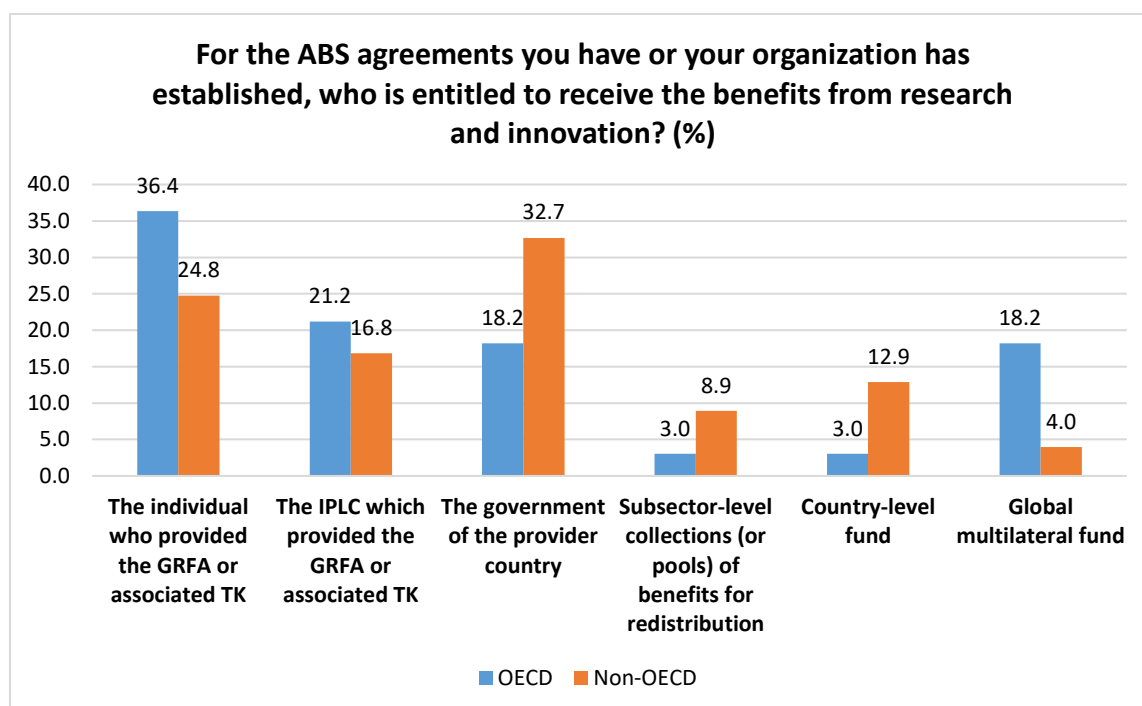
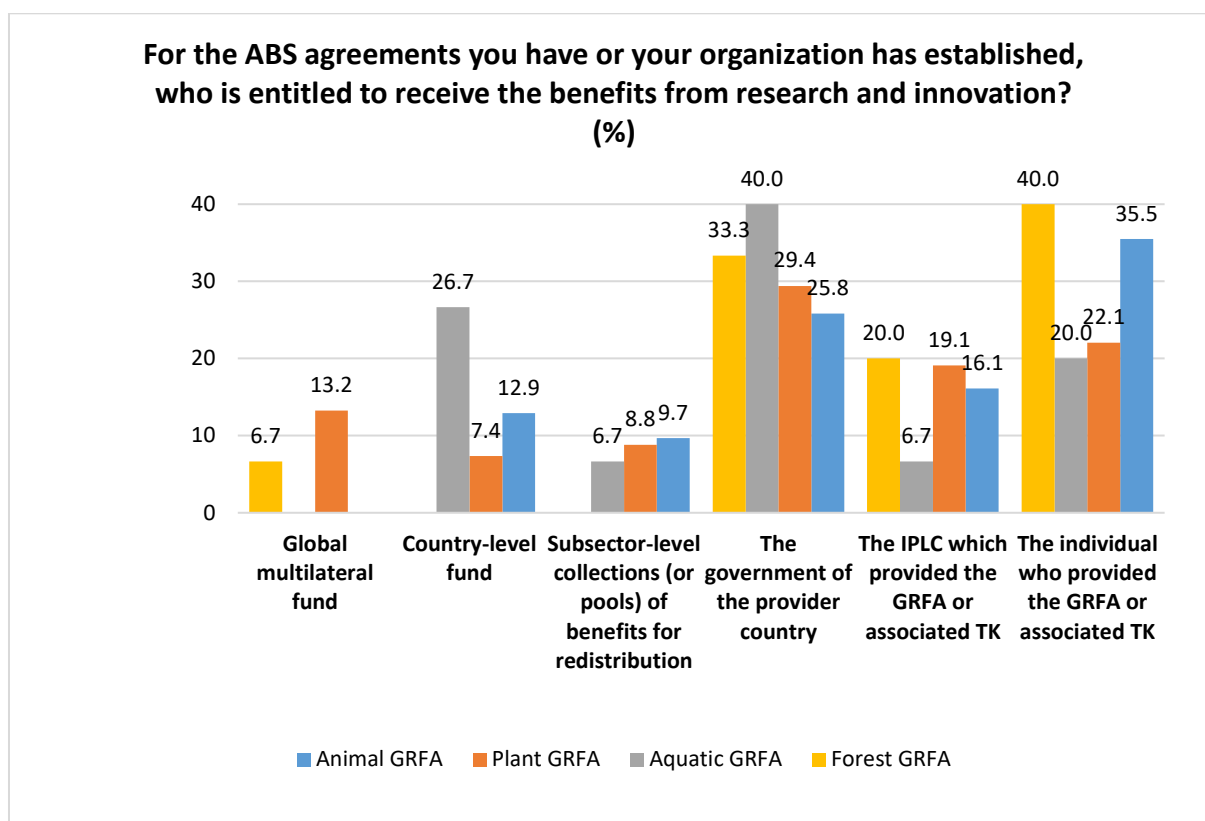
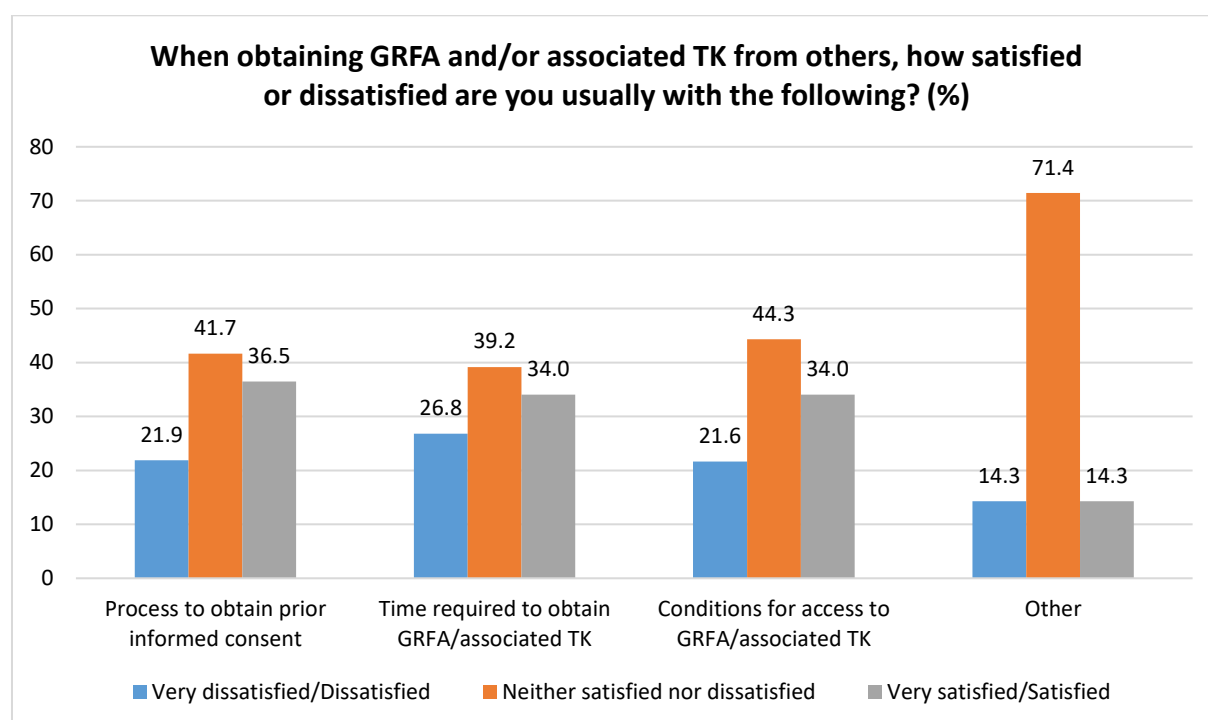
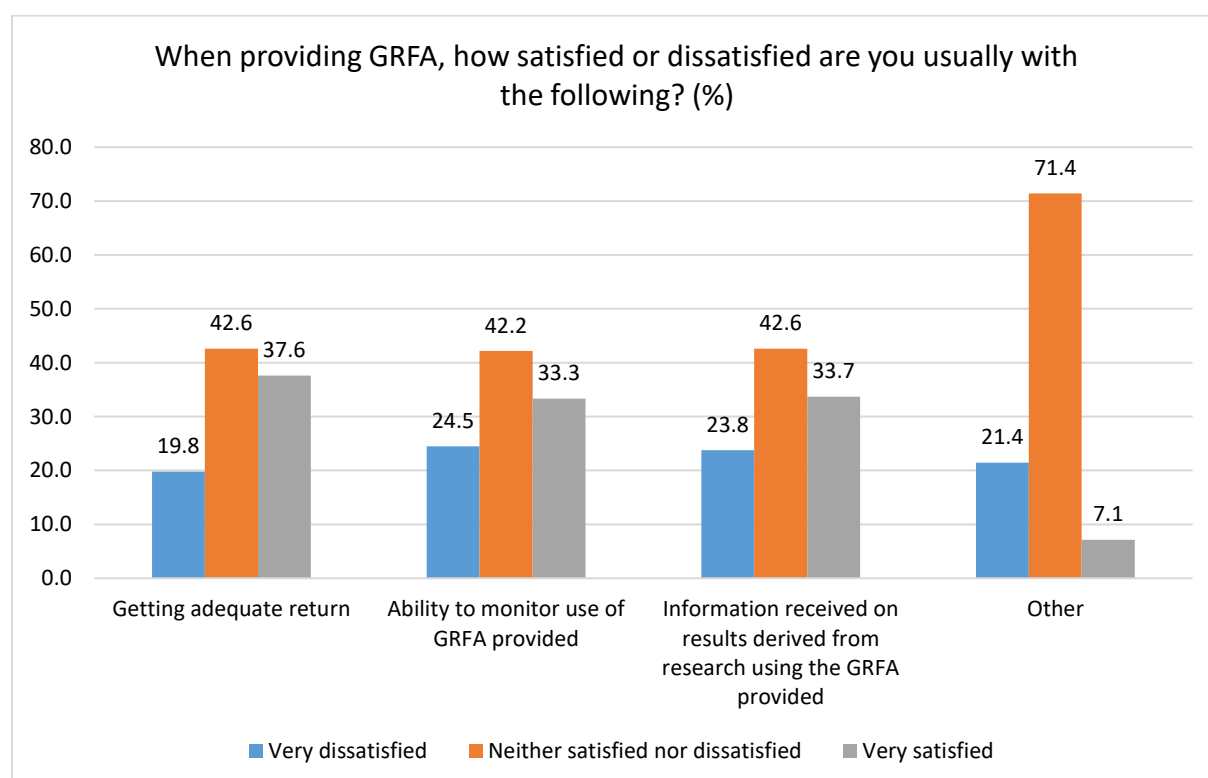


Figure 28: Allocation of benefits by sectors

2.2.4 Level of satisfaction with ABS

The survey asked respondent stakeholders about their level of satisfaction or dissatisfaction with ABS. The level of dissatisfaction is the highest concerning the time required to obtain GRFA but, overall, dissatisfaction is expressed for only about one-fourth of respondents for all access procedures (Figure 29). The majority of respondents do not have strong opinions. The same pattern was found for the level of satisfaction with benefit-sharing (Figure 30).

Figure 29: Level of satisfaction with access procedures**Figure 30: level of satisfaction with benefits**

III.PART 2 NFP SURVEY FINDINGS

3.1. Characteristics of respondents

3.1.1 General overview

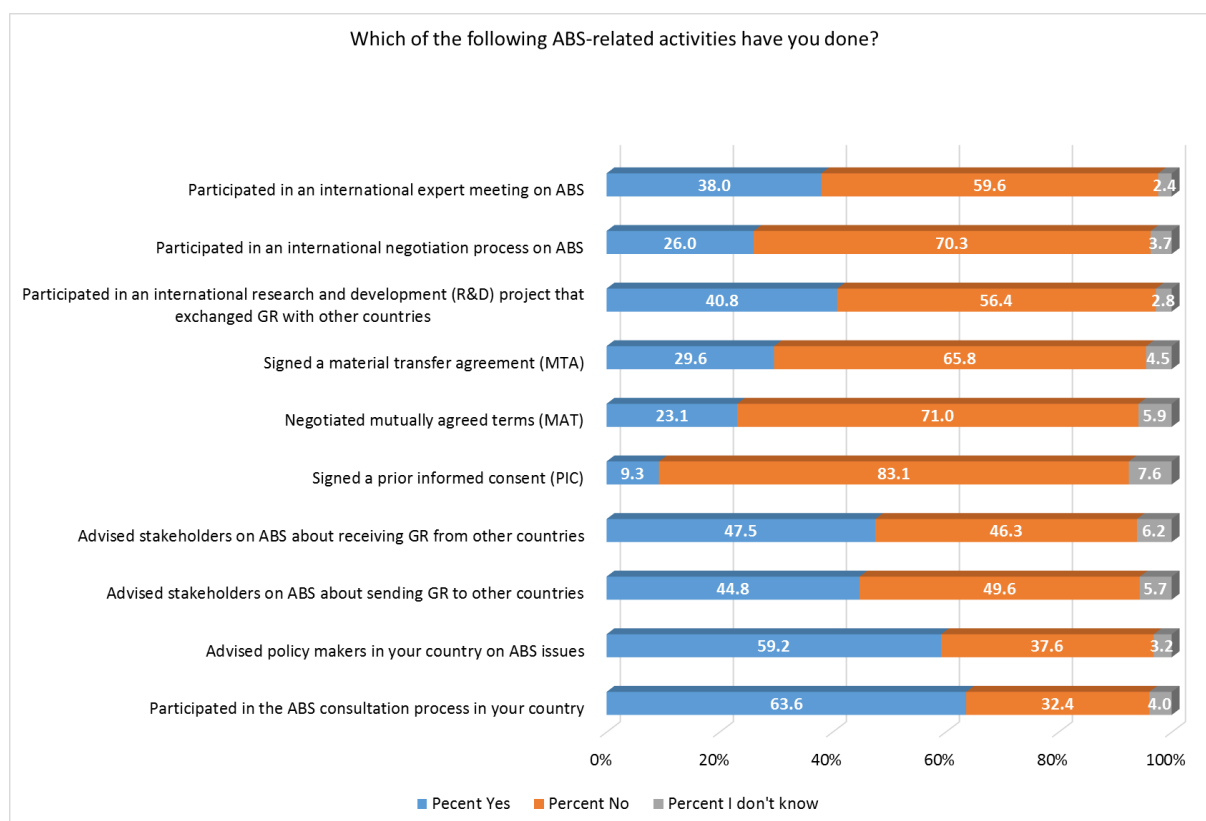
Most NFPs respondents identify as either plant genetic resource NFPs or animal genetic resource NCs because they are more represented in the sample frame. Almost one-fourth of the respondents (22.1 percent) identified more than one subsector for which they serve as NFP/NC. The average years served as a NFP or NC is just over six years.

Table 4. Percent responses by type of NFP/NC

Current NFP/NC	Percent Respondents
NFP Commission	20.7
NC AnGR	26.8
NFP PGR	27.1
NFP AqGR	8.6
NFP FoGR	12.1
NFP Biodiversity	16.8
None of the above	10.0

3.1.2 Information, awareness and involvement of NFPs on ABS

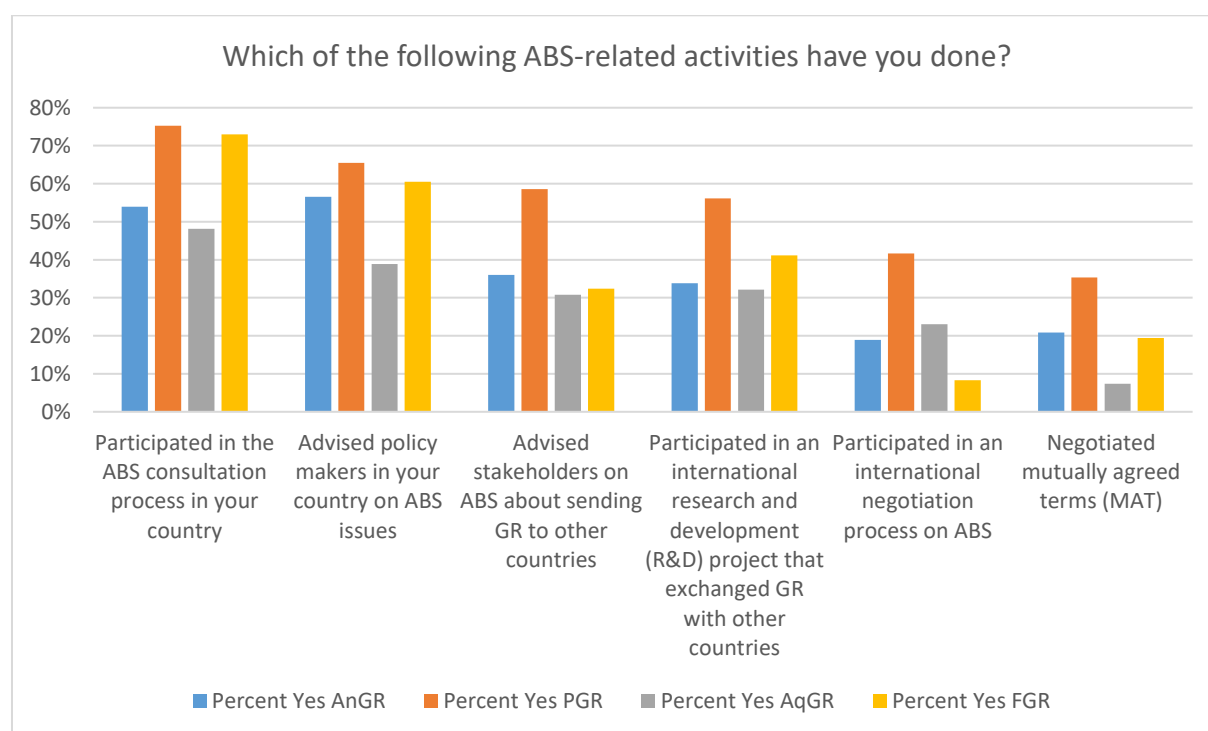
To understand the involvement of NFPs/NCs in ABS issues in their countries, the survey asked respondents to indicate if they had undertaken a range of different types of associated activities. Figure 31 shows that a majority of NFP/NC respondents are involved in ABS consultation and policy advice, while just under half have advised others on sending or receiving GRFA internationally. Approximately 40 percent are or have been involved in international R&D in which GRFA are exchanged. This confirms that NFPs/NCs in the food and agriculture sector are not limited to administrative functions but are often directly involved in GR use and exchange. This dual function is definitely an asset upon which the agriculture sector could build to design efficient and operational ABS rules.

Figure 31: NFP/NC involvement in ABS-related activities

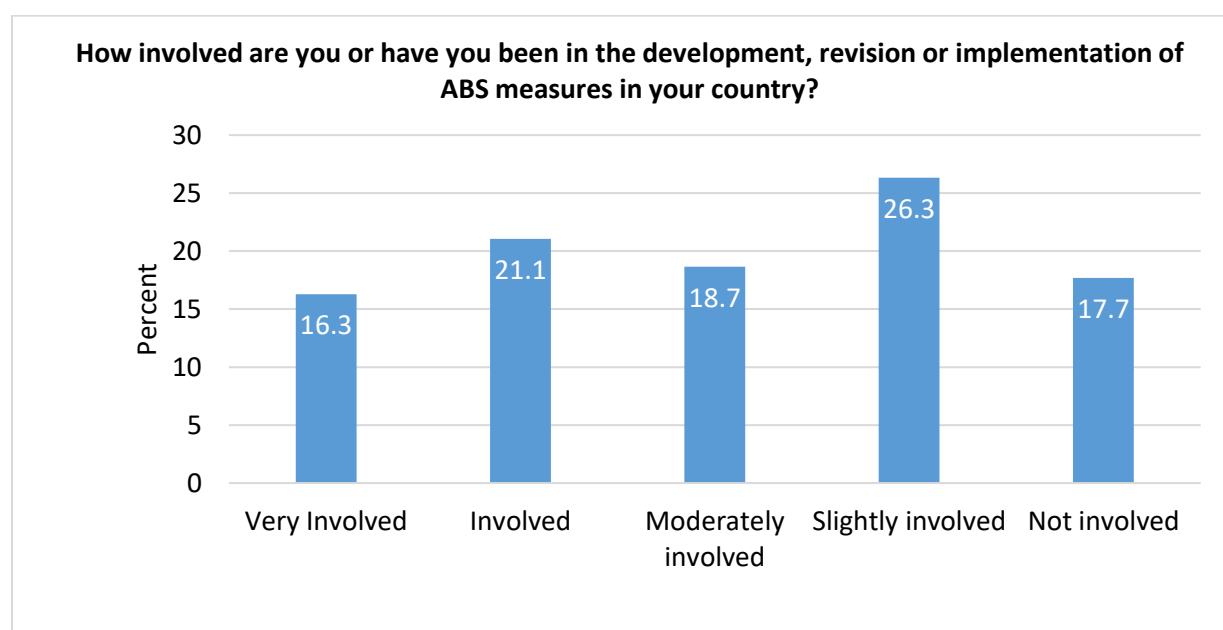
There are substantial differences among subsectors with regard to their level of involvement in ABS-related activities (Figure 32). The plant sector is much more involved than the other subsectors. The forest sector is also quite involved in policy-related activities at national level. Except for plants, involvement in policy-related activities at international level is quite low. Almost one-third of respondents in all subsectors have practical experience in exchanging GRFA in the context of R&D projects. As shown in Table 5, OECD country respondents report greater involvement than non-OECD country respondents, though the difference is slight.

Table 5: How involved are you or have you been in the development, revision or implementation of ABS measures in your country? (Scale: not involved (1), slightly involved (2), moderately involved (3), involved (4), very involved (5))

	OECD	Non-OECD
Number of responses	61	148
Mean	2.98	2.89

Figure 32: Involvement in ABS-related activities (by sectors)

For those individuals who indicated that their country had begun to undertake ABS discussions and policy, Figure 32: Involvement in ABS-related activities (by sectors) Figure 32 shows that more than one-third of the respondents report being involved or very involved in ABS development, revision or implementation. Less than 18 percent are not involved at all.

Figure 33: Involvement in development, revision or implementation of ABS measures

The survey sought to understand whether NFPs/NCs recalled receiving information about ABS, what the source of the information was, and whether it was considered useful. Further, given the objectives

of FAO's ABS Elements to facilitate the development of ABS measures, NFPs/NCs were asked whether they were familiar with the Elements. Findings show areas for improvement for both (Figure 34). Approximately 85 percent of all respondents reported receiving some form of written information on ABS during the last two years, 62.5 percent of the respondents reported receiving information on ABS from FAO and almost half (45.5 percent) received information from their government, with lower percentages reporting other sources. (Note: respondents were able to check multiple categories.) Additionally, almost 50 percent of the respondents are not aware of the existence of the ABS Elements (Figure 35). It is possible that there is some misunderstanding about what the Elements are and how they are referred to. Nevertheless, there is significant opportunity for increased awareness and dissemination of FAO-produced information.

Figure 34: Source of information on ABS

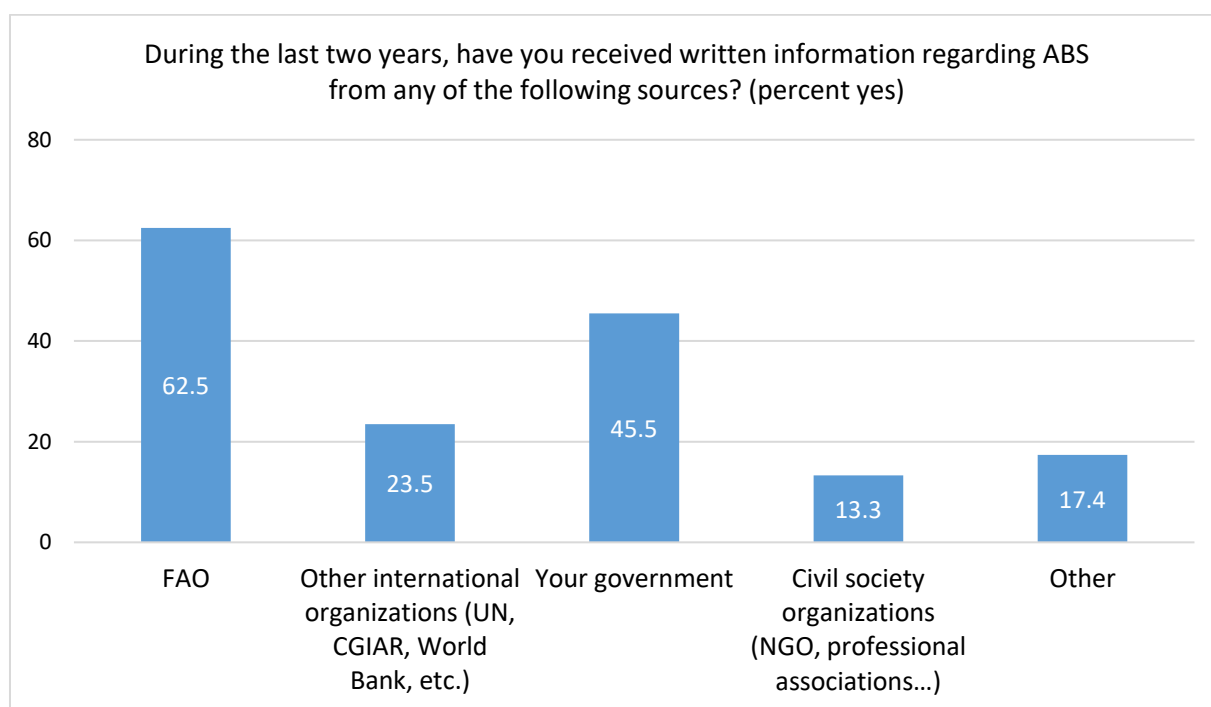
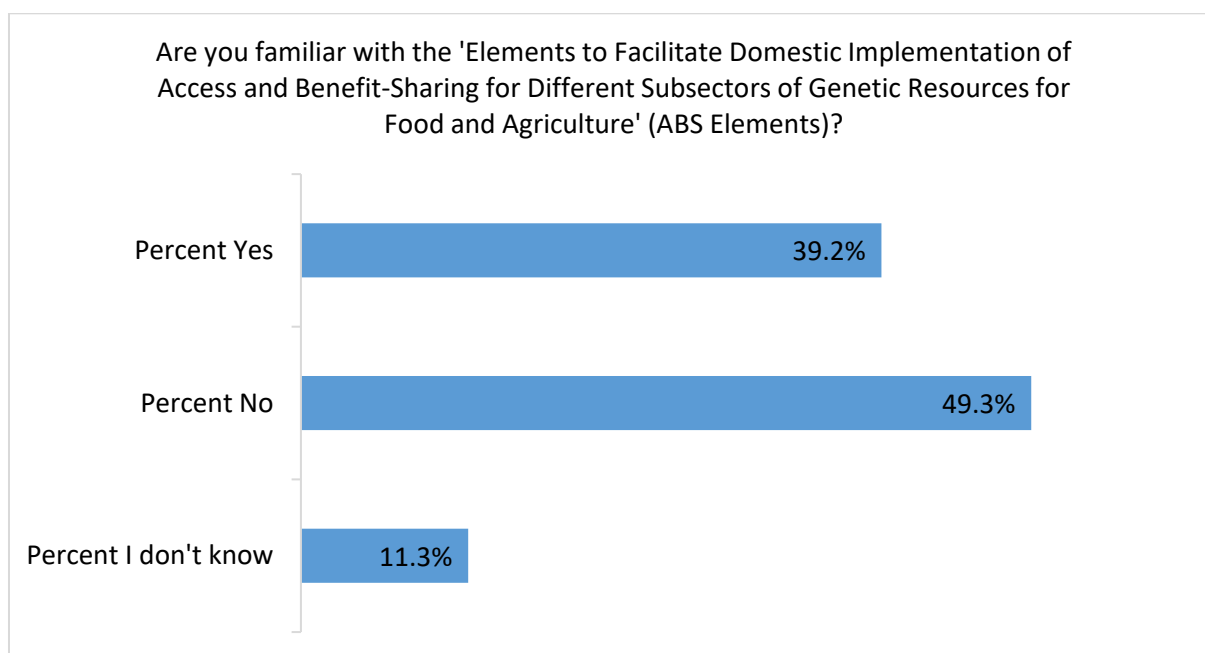
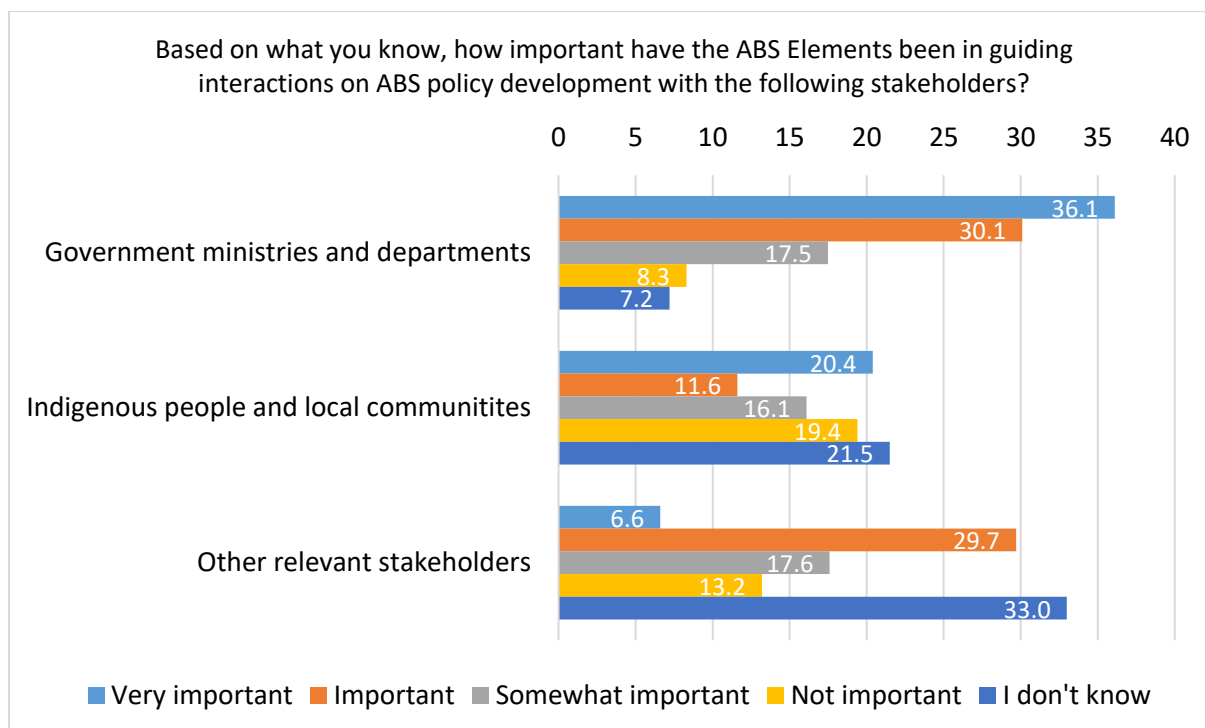


Figure 35: Awareness of the FAO's ABS Elements

Finally, the survey asked NFPs/NCs who were familiar with the Elements whether they had been useful for guiding interactions on ABS policy development with various stakeholders, including government ministries and departments, IPLCs and others. Two-thirds indicated that the Elements were important or very important for guiding discussions with government, while about one-third considered the Elements important or very important for discussions with IPLCs and others (Figure 36). The survey did not ask respondents for additional information about why the Elements were or were not important, but this could be important to explore for the development of the Notes.

Figure 36: Relevance of ABS Elements in guiding policy interactions

3.1.3 Level of involvement of GRFA stakeholders as reported by NFPs

Respondents reported extensive consultation with various stakeholders on the development, revision and implementation of ABS measures (Figure 37). These consultations frequently include coordination among national governmental entities, but also include non-governmental stakeholders providing or utilizing GRFA, including farmers and IPLCs, genebanks and collections, research institutions and private-sector entities. Comparing across OECD and non-OECD country respondents shows that while there are some differences – national level governments are consulted more in OECD countries and farmers and local governments are consulted more in non-OECD countries – the differences across groups are not substantial (Figure 38).

Figure 37: Stakeholder consultations in development, revision or implementation of ABS measures

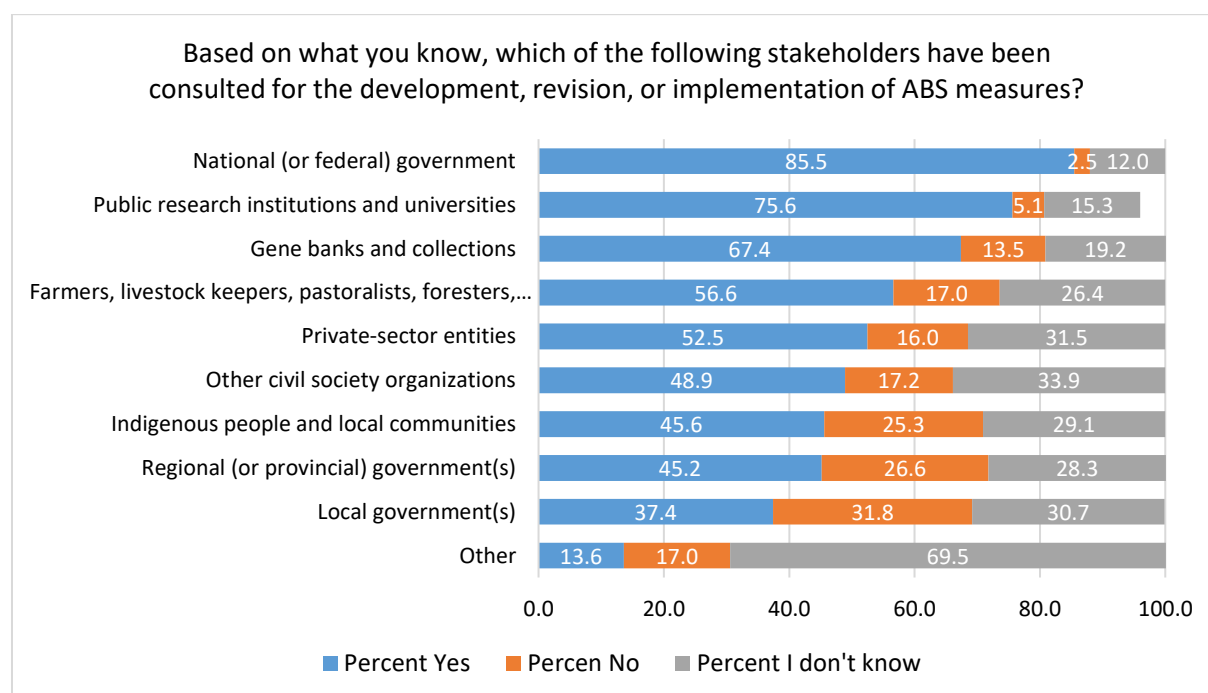
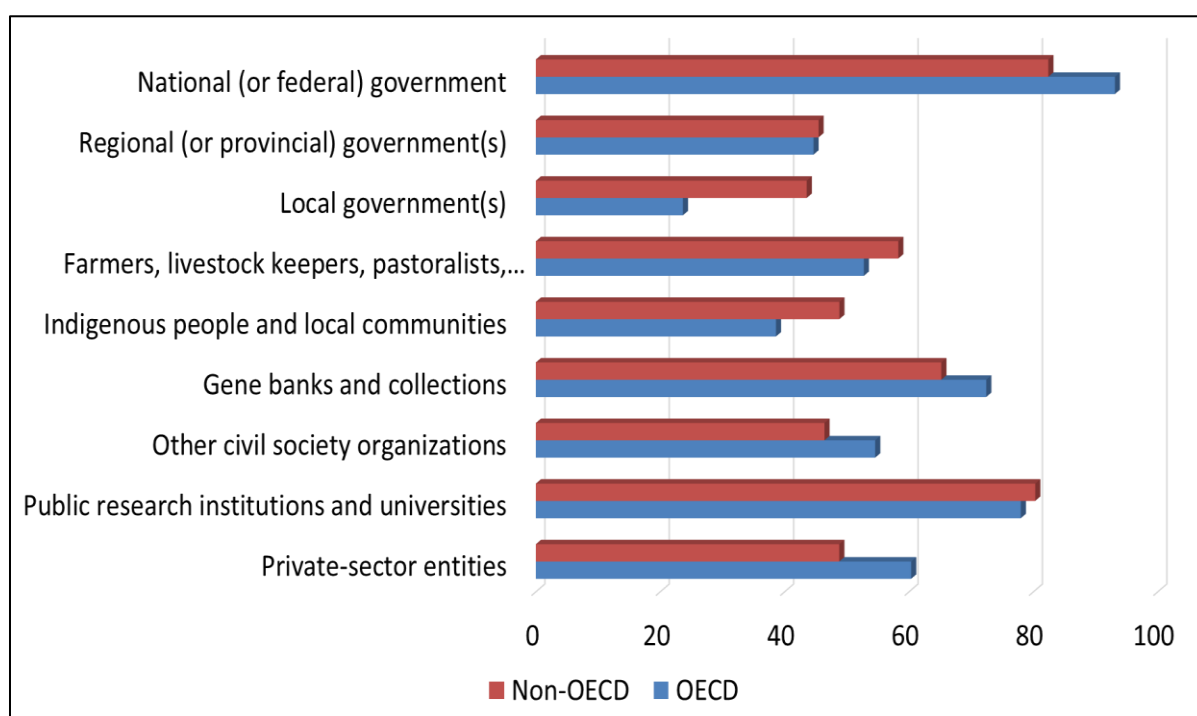


Figure 38: Level of stakeholder consultation on ABS (% yes)

3.2 Status of ABS activities for GRFA in countries

3.2.1 Status of ABS implementation

Error! Not a valid bookmark self-reference. shows that the majority (73.4 percent) of respondents indicated that their country had initiated ABS activities. More than 40 percent of respondents reported that ABS measures have been adopted and are being implemented. Only one-fifth reported no ABS-related activities have begun in their country. When broken down by country type, OECD countries tend to report higher levels of implementation compared with non-OECD countries, though these differences are relatively small. (

Figure 40).

Figure 39: Status of ABS policy process

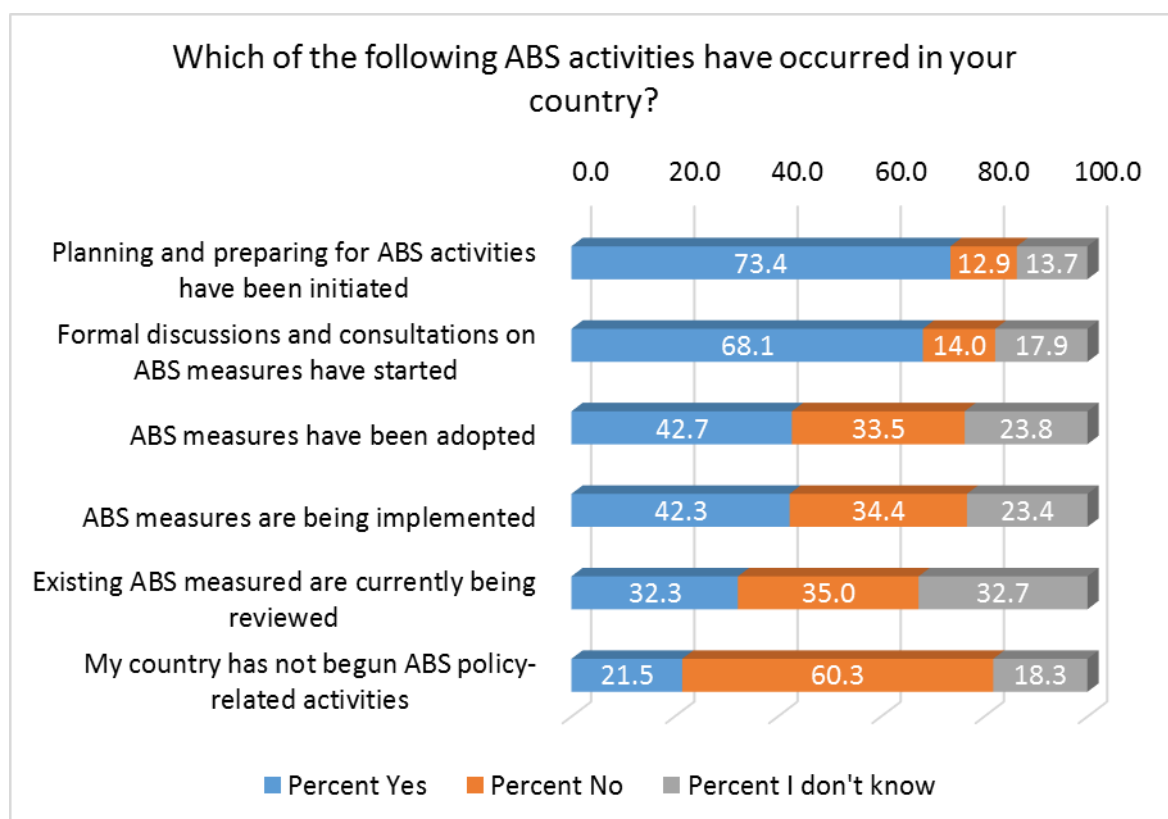
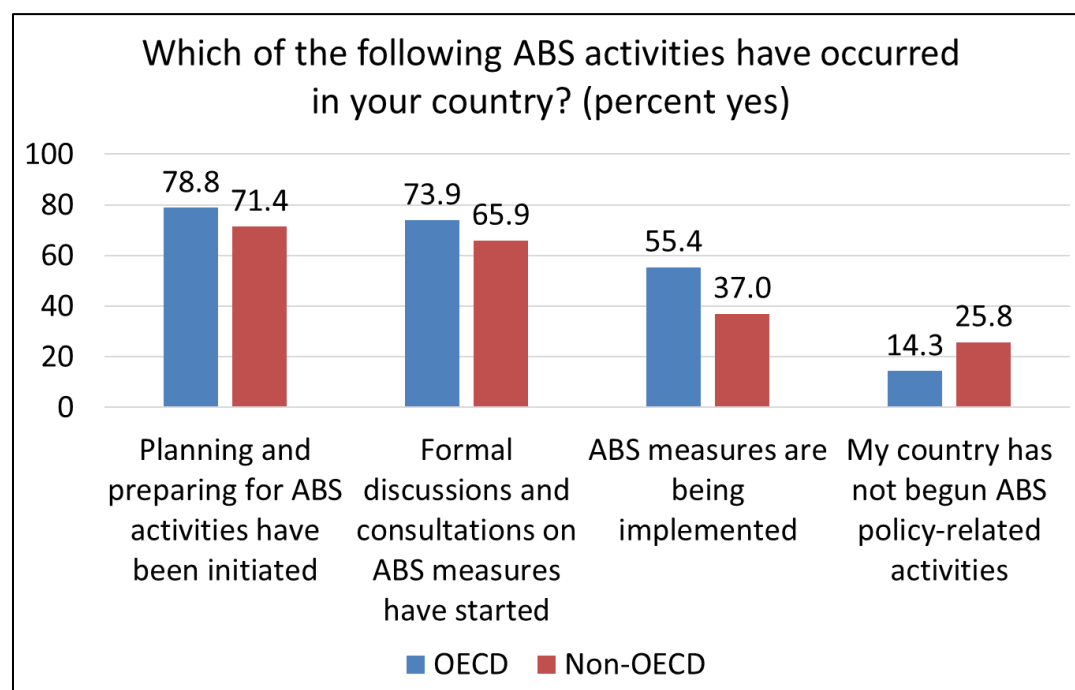


Figure 40: Status of ABS policy process in country, OECD/non-OECD



3.2.2 Level of consideration for GRFA in ABS

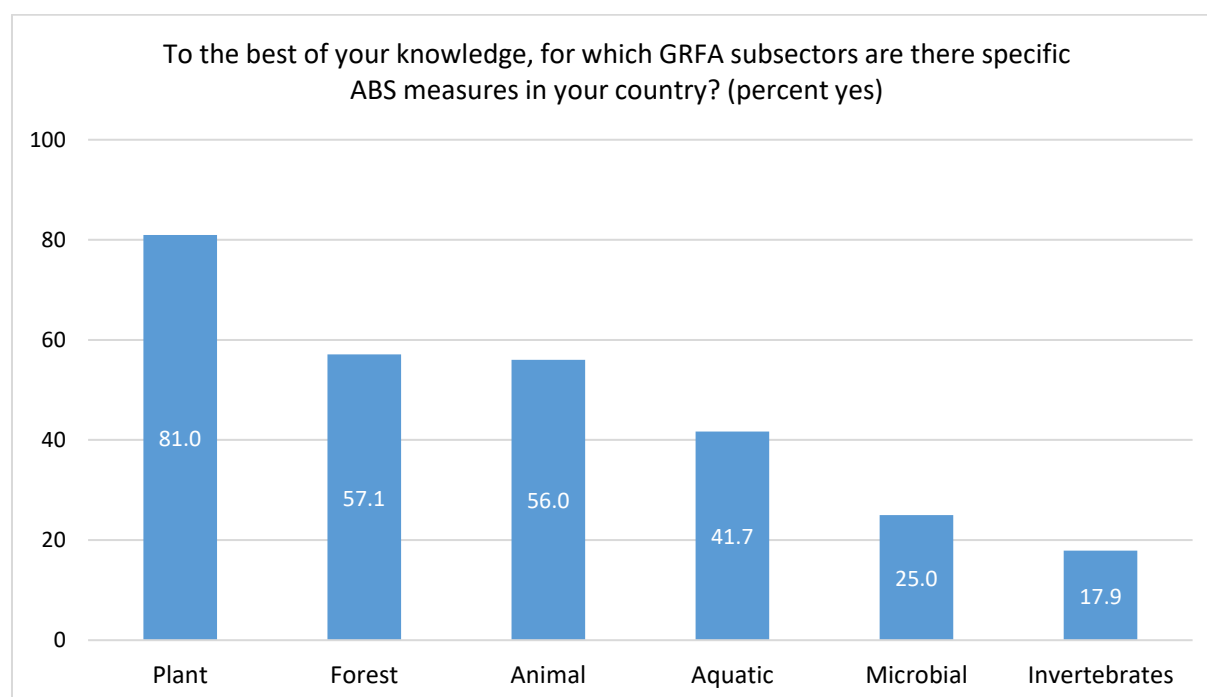
Of the 191 individuals indicating that ABS had begun in their country, nearly 81 percent confirm that ABS discussions and consultations consider GRFA. About 10 percent responded that their country had not considered GRFA, while the remainder were unsure.

Fewer respondents confirmed ABS measures had been adopted, implemented or were being reviewed in their country (148 of the 191, or about half the total sample). Of the 148, about two-thirds (100 respondents) indicated the measures include GRFA. Less than one-fifth (18.9 percent) indicated that GRFA was not included in ABS measures. The rest were unsure.

In addition, the survey also asked whether ABS measures specifically mention some subsectors of GRFA (e.g. plant or animal GRFA). Of the 100 who confirmed the existence of ABS measures in their countries, 92 responded to this question. Of those, 82.6 percent responded that specific subsectors were included. This indicates that countries undertaking ABS measures that include GRFA are also considering subsector-level detail.

Down from 100 who said that measures in their country would include consideration of GRFA, and 92 who said there are sector considerations, only 84 respondents (about 30 percent of all the respondents) have specified subsector level GRFA measures in their countries (Figure 41). Plants are most frequently identified (81 percent), followed by FGR (57 percent), AnGR (56 percent), AqGR (42 percent), Micro-organism GR (25 percent) and invertebrates (18 percent).

Figure 41: Existence of ABS subsector-specific measures

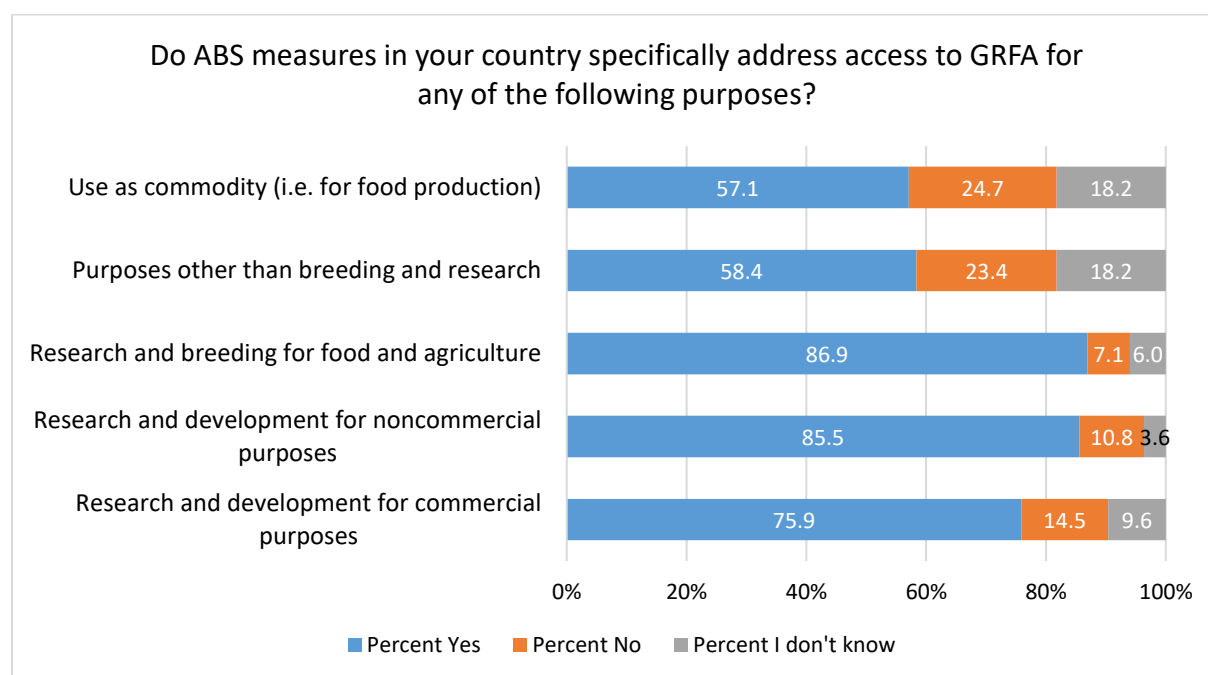


In summary, about half of all respondents confirm that ABS measures are at least adopted in their countries, while only about one-third of all respondents confirm ABS measures for GRFA, most of which are subsector-specific.

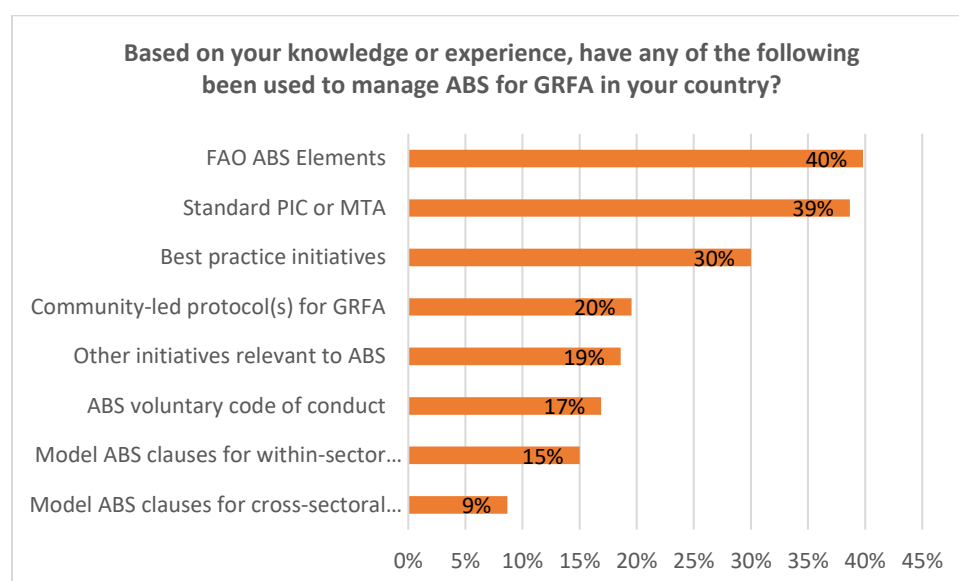
3.2.2.1 Legal, policy and administrative measures

The survey asked respondents about the purposes and uses considered by existing ABS measures, including R&D for commercial and non-commercial purposes. Findings show that nearly all ABS measures accommodate research and breeding, while lower non-research purposes and food production are less likely to be covered (Figure 42).

Figure 42: Consideration of the different purposes of GRFA use in ABS measures



In addition to specific administrative or legal measures covering subsectors such as PGRFA, it is increasingly common for GRFA stakeholders to develop specific practices for the use and exchange of genetic resources for research and development purposes. Survey findings show (Figure 43) that standard PIC or MTA and best practices initiatives are reported as the most commonly used instruments to facilitate ABS implementation. However, the findings also confirm that 40 percent of respondents are making use of the ABS Elements and that other tools are also in evidence.

Figure 43: Use of specific instruments for managing ABS for GRFA

3.3 Experiences with PIC implementation

The survey sought to obtain insights on how countries approach PIC or approval and involvement of IPLCs in the case of GRFA and associated TK.

Error! Not a valid bookmark self-reference. shows that almost one-third of respondents reported the existence of PIC procedures in place for access to GRFA held by IPLCs and TK on GRFA. There seems to be no significant differences between the physical material and the knowledge associated with it held by IPLCs.

In addition, the survey also asked about the approval process for PIC. Of the respondents who reported on existence of PIC procedures, the majority of respondents indicated that PIC is sought from a community-designated committee or the community leader and to a lesser extent (approximately 30 percent) from the entire community (Figure 45). Consultations and meetings are by far the main vehicles used to obtain PIC from IPLCs (Figure 46).

Finally, 46.6 and 40 percent of respondents reported on the existence of measures or procedures to redistribute benefits to IPLCs arising from, respectively, the use of GRFA and the use of TK on GRFA held by IPLCs.

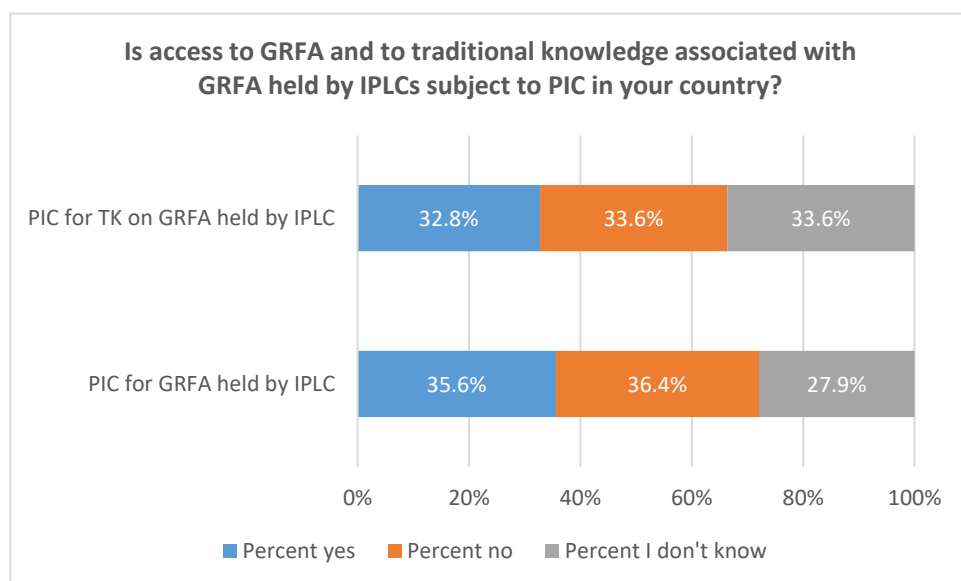
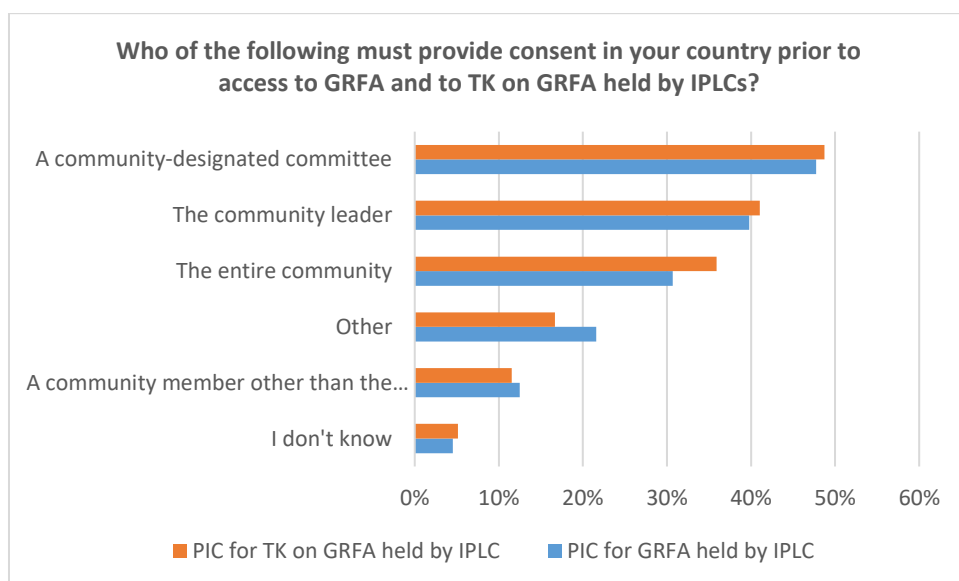
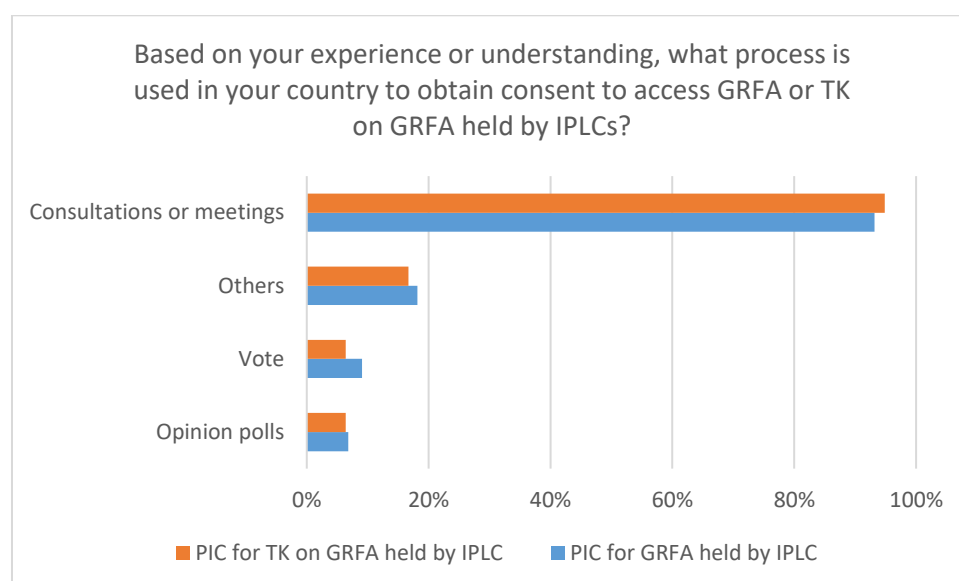
Figure 44: Experience with PIC implementation**Figure 45: PIC approval for GRFA and TK on GRFA held by IPLC**

Figure 46: PIC process for GRFA and TK on GRFA held by IPLC

3.4 Subsector specificities

3.4.1 General considerations

To ascertain consistency across subsectors, the survey collected subsector-level responses to several agree/disagree questions about the characteristics of GRFA. Respondents were first asked to identify the subsector with which they were most familiar. All respondents were then asked three sets of agree/disagree questions with the specific subsector embedded within the question text (here noted as xxGR). Findings are presented in Figure 47, 48 and 49. The scale for all three sets of questions is: strongly disagree = 1; disagree = 2; neither agree nor disagree = 3; agree = 4; strongly agree = 5.

The first set of general questions (Figure 47) shows relatively consistent question-level responses across subsectors, although respondents from the plant subsector are consistently more in agreement that GR are of exotic origin, have been shaped over generations and are essential for achieving food security. Differences across questions are consistently more striking with stronger agreement that GR are essential for achieving food security than for the other two statements.

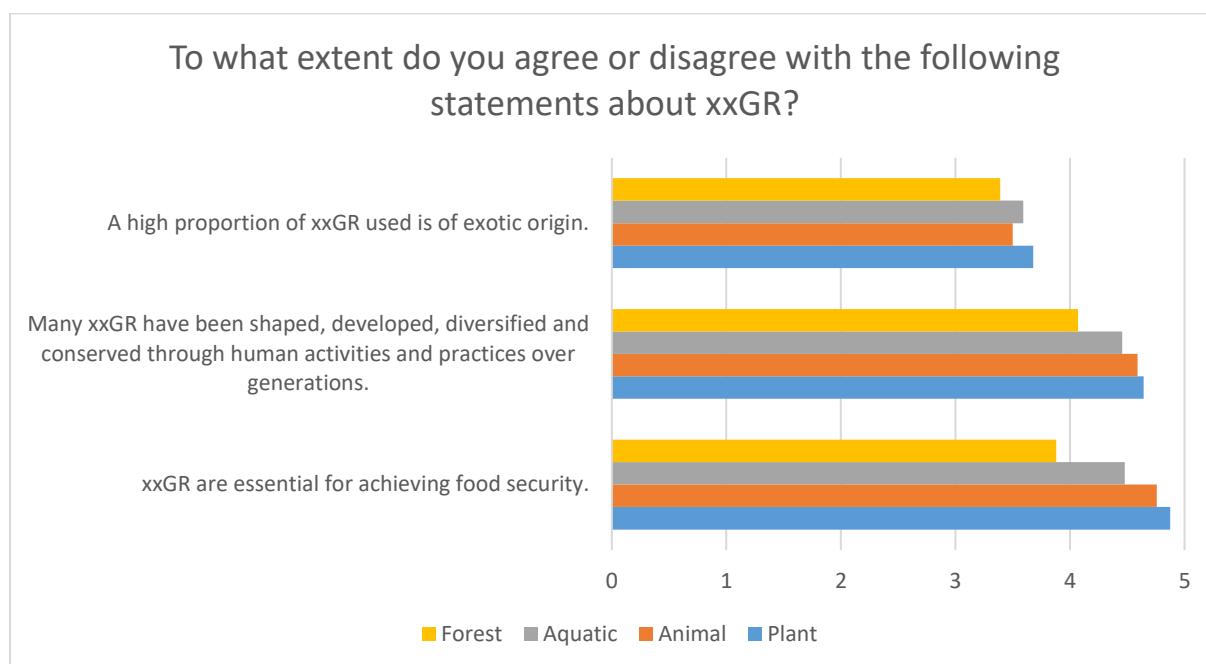
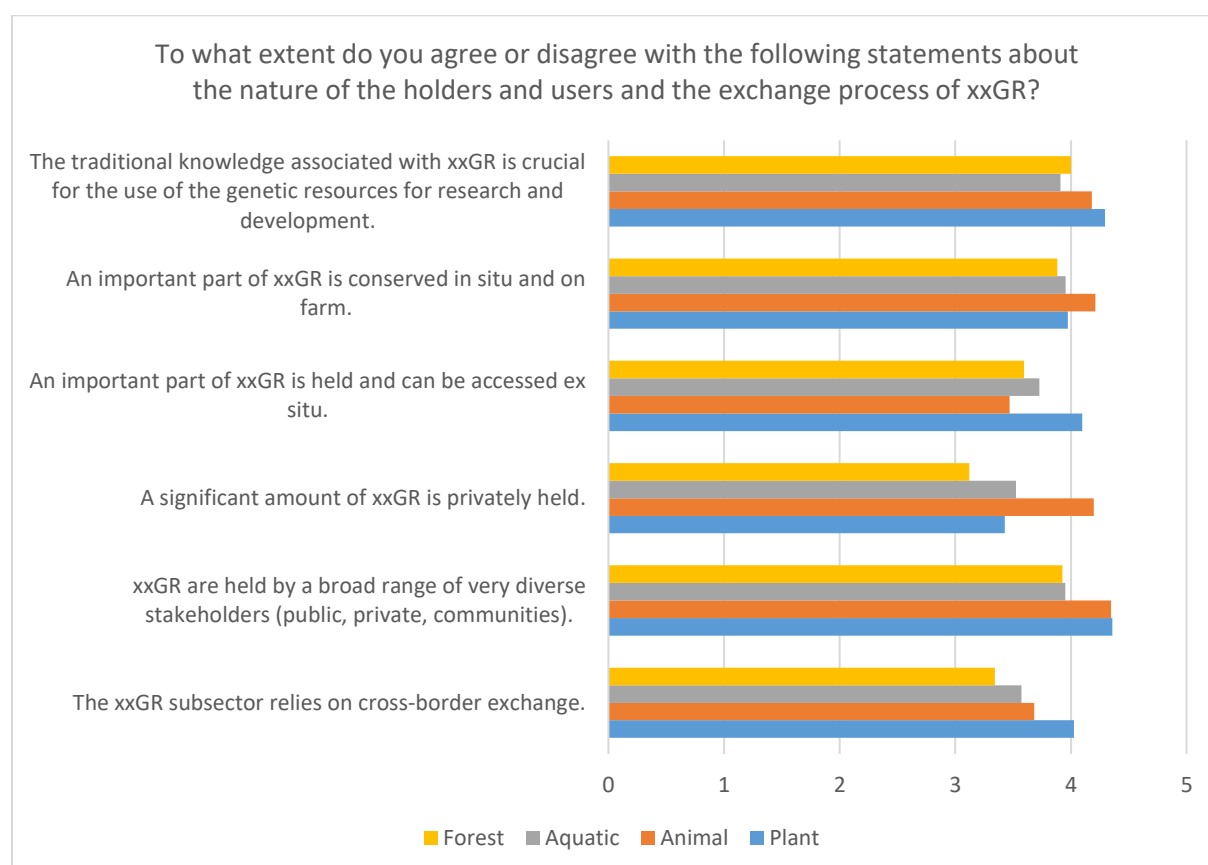
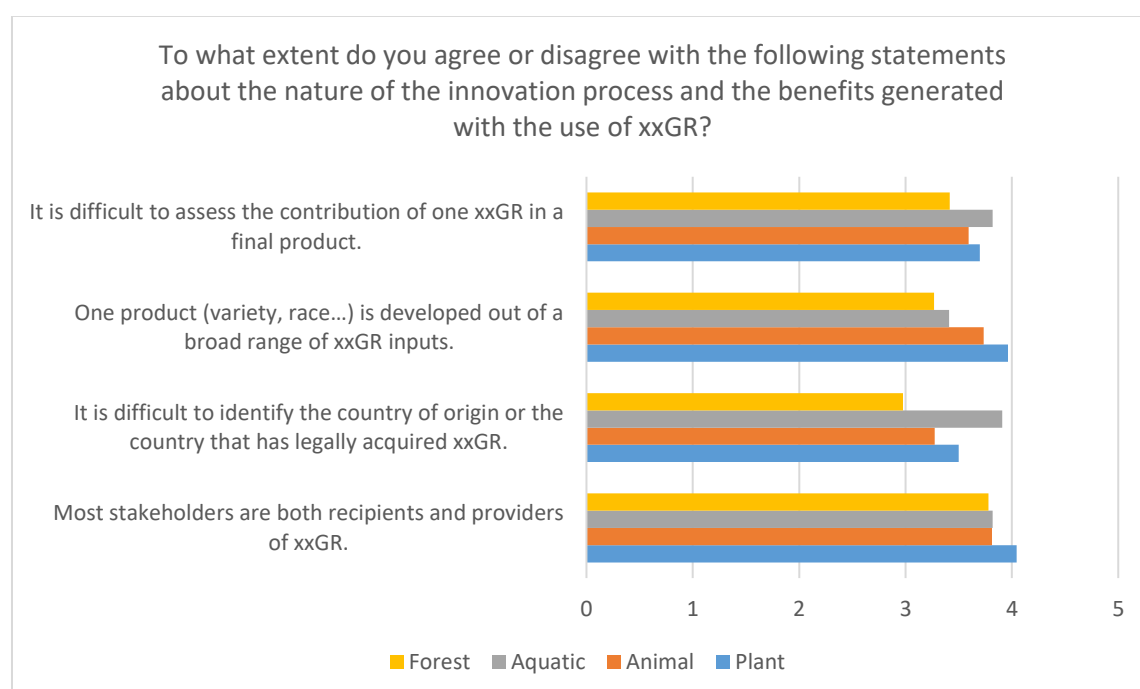
Figure 47: General agree/disagree statements about GRFA by subsector

Figure 48 shows responses to a set of questions concerning the holders, users and exchange process of the particular subsector. These questions demonstrate consistency regarding the importance of traditional knowledge for R&D, as well as of *in-situ* and on-farm conservation. As expected, animal subsector respondents are in stronger agreement on the importance of *in-situ* and on-farm conservation, while plant subsector respondents agree more with the importance of *ex-situ* conservation and access. Animal GRFA are more likely to be privately held, while plant respondents are more likely to agree that the subsector relies on cross-border exchange. Across questions, all respondents are generally more likely to agree on the importance of traditional knowledge for research, *in-situ* conservation and the diversity of stakeholder holdings of GRFA than with the other three questions.

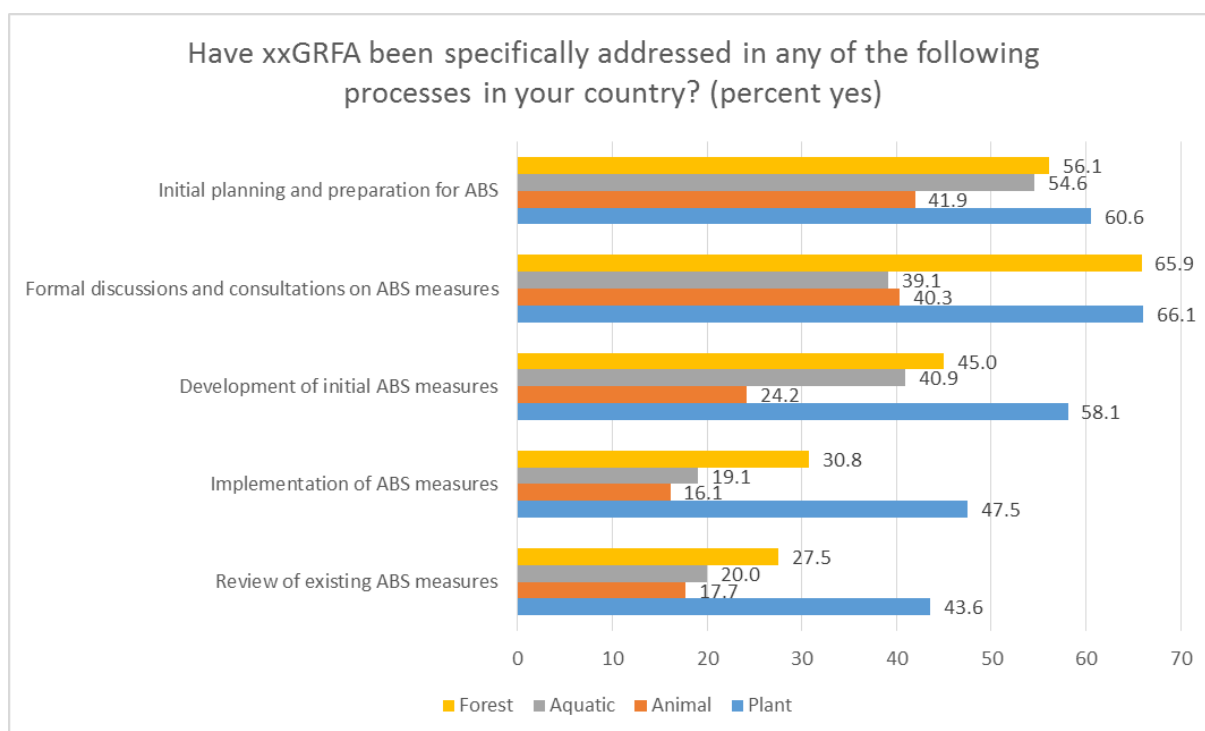
Respondents were also asked about the innovation process and benefit-sharing at the subsector level. Findings, presented in Figure 49, show generally a lower level of agreement with all questions across all subsectors as average question responses rarely reach four (agree) on the five-point scale. Across subsectors, plant experts are more likely to find that products are developed from a range of GRFA inputs and that stakeholders are both providers and recipients. Aquatic experts are more likely to find it difficult to assess the contribution of GRFA in a final product and country of origin.

Figure 48: General agree/disagree statements about GRFA by subsector**Figure 49: Agree/disagree statements about use and exchange of GRFA by subsector**

3.4.2 Subsectors considerations in ABS measures

As shown in Figure 50, all subsectors for food and agriculture report a fair level of specific consideration of their subsector in the initial phase of the ABS policy process (planning and discussion). The animal and aquatic sector representatives report the least subsector consideration at most stages of the ABS policy process. However, with the exception of the plant sector, the level of subsector consideration drops, sometimes by half, at the stage of review or implementation of ABS measures. In part this may be because many countries are in an earlier stage of ABS policy development. However, subsector consideration may also be eliminated as part of the policy process.

Figure 50: GRFA considerations in ABS policy process (by subsectors)



IV.GENERAL CONCLUSION

Given the substantial amount of information produced by the two surveys, it is helpful to conclude the report with some highlights of the findings. The focus here is on the topics of greatest interest to the Commission and its membership, and to respond to five areas of enquiry useful for the development of the explanatory notes. A section on limitations of the study is also included.

Awareness, involvement in ABS activities

Overall, the results tend to show a fair level of NFPs'/NCs' awareness about ABS and involvement in ABS policy-related activities. Representatives from the plant subsector remain by far those more heavily involved in ABS policy-related activities. Interestingly, approximately 40 percent of respondents are or have been involved in international R&D in which GRFA are exchanged. This confirms that NFPs/NCs in the food and agriculture sector are not limited to administrative functions but are often directly involved in GR use and exchange. This dual function is definitely an asset upon which the agriculture sector could build to design efficient and operational ABS rules.

Exchange practices and sector specificities

Stakeholders and NFPs/NCs identify similar perceptions about exchange practices and specific characteristics of their own subsector. The survey results showed that respondents exchange GRFA from different subsectors. This means that treating subsectors as silos in which actors are only involved with plants or microbes, for example, is not realistic. Many people exchange both plants and microbes.

Exchange practices and use of instruments

A large proportion of stakeholders exchange GRFA as part of ongoing collaborations rather than as one-off transactions. This may indicate that, in designing and implementing specific ABS mechanisms for GRFA, use of legally-binding mechanisms should be complemented by socially-binding mechanisms.

Stakeholders make use of a variety of instruments for ABS, but the level of use of such instruments is low. Besides, only a small proportion of stakeholders use specific ABS mechanisms such as PIC or MTA. As a result, stakeholders in subsectors other than plants would probably benefit from receiving more information and guidance.

Experience with PIC

PIC for GRFA or TK on GRFA are not fully in place in most situations, as reported in the NFP/NC survey. Findings from the stakeholder survey show important differences among sectors with regard to development of PIC procedures. PIC seems more developed in the aquatic subsector, followed by the plant and animal subsectors. It is almost absent in the forest subsector. Similarly, important differences exist among countries: only a very small proportion of OECD countries have established PIC procedures.

Experience with PIC implementation would benefit from case study analysis to draw lessons from concrete experience and foster exchange of information.

Status of ABS implementation

About half of all NFP/NC respondents confirm that ABS measures have been adopted in their countries, while only about one-third of all NFP/NC respondents indicate that ABS measures specifically address GRFA. Results also indicate that countries with ABS measures that specifically

address GRFA often also consider subsector-level specific detail, e.g. for animal, forest or aquatic genetic resources.

ABS Elements

Findings from the NFP/NC survey indicate that about half of the respondents were aware of the existence of the ABS Elements and 40 percent are actively using the ABS Elements. Of those who were aware of the ABS Elements, two-thirds consider them important or very important for guiding discussions with the government, and about one-third consider them important or very important for discussions with IPLCs and other stakeholders.

Limitations

There are some limitations to this study. First, the sample frame of the NFP/NC survey is limited to individuals who have defined roles in the Commission and therefore are more likely to understand ABS policy processes in their countries than other government or non-governmental actors.

The findings may overstate the status of ABS policy globally as those countries that have not begun ABS policy processes might be less likely to respond. Nevertheless, the survey received responses from 136 countries, which is a high percentage of the Commission's membership. As for the stakeholder survey, the sample frame was based on nominations provided by the NFP/NC respondents as well as individuals who attend relevant meetings and events. To a large degree, the sample frame is probably overly representative of individuals involved in research and policy. In addition, the survey does not include a large number of IPLCs and is likely not sufficiently representative of the population of IPLC actors. Finally, there is low representation of the micro-organism and invertebrate subsectors in both surveys. As a result, survey instruments are a less viable option for data collection in these two subsectors.

APPENDIX: GENERAL OVERVIEW OF IPLC RESPONSES

Indigenous people and local communities (IPLC) respondents are mainly knowledgeable about traditional knowledge (TK) associated with plant and forest genetic resources. The majority of the respondents have participated in ABS consultations and expert meetings in their countries or at the international level. Most of the respondents have either a leading role or an advisory role within their IPLC community or organization.

There are no major differences in the domestic or foreign pattern of exchange of TK associated with Genetic Resources for Food and Agriculture (GRFA). The majority of exchange domestically takes place with other IPLC or farmers' organizations.

Slightly more than half of respondents have developed prior informed consent (PIC) procedures for providing GRFA and associated TK. Almost all these PIC procedures are included and/or recognized within the regulatory framework of their country. These PIC procedures are all based on a consultation processes involving the entire community. In some cases, a community-designated committee is consulted to provide consent to access to GRFA and associated TK. Increased support and capacity building activities as well as development of community protocol to engage with other interested parties such as research organizations, universities, governments and private companies were identified as ways to improve current PIC processes.

With regard to benefits received from providing TK associated with GRFA, respondents mainly reported capacity building and training activities and, to a lesser extent, flowback information and monetary amounts.